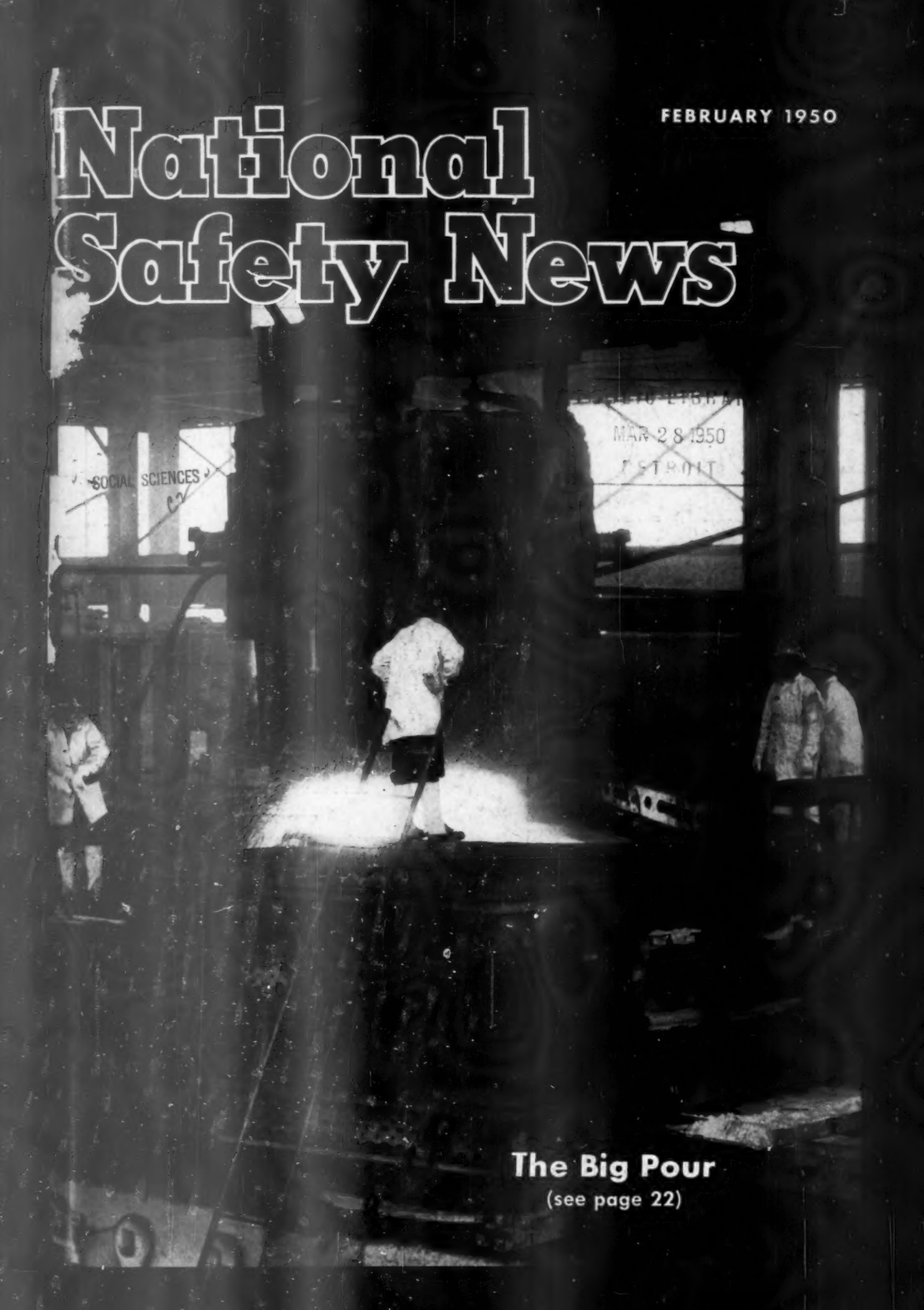
National Safety News

FEBRUARY 1950



The Big Pour

(see page 22)

MSA

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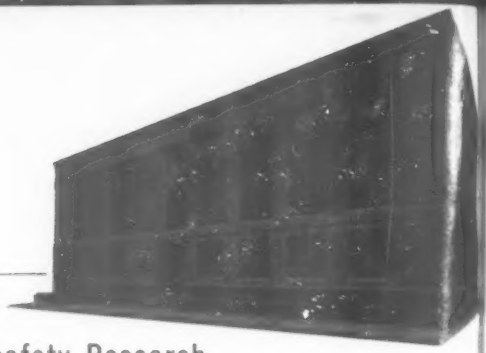

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NATIONAL SAFETY NEWS

Published monthly by the National Safety Council

FEBRUARY, 1950 Vol. 61, No. 2

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27,700 copies of this issue were printed.

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Statements and opinions advanced in signed articles are the personal expressions of their authors, not necessarily those of the National Safety Council.

Copyright 1950 by National Safety Council, Inc. Printed in U. S. A. Entered as second class matter June 21, 1921, at the Post Office at Chicago, Illinois, under the act of March 3, 1879. Subscription rate: To members, $5.00 per year, single copies, 50 cents; to non-members, $7.50 per year, single copies, 75 cents. Quantity prices for yearly subscriptions and single issues on request. Member Audit Bureau of Circulation. Indexed in Industrial Arts Index.

In This Issue . . .

SAFETY in this mining community is on the job 24 hours a day and the program includes both the miners and their families. And the company has found that a reputation for safety attracts skilled, safety-minded men. (Page 18).

• • •

For many years the U.S. Engineers have been carrying on energetic safety programs on their widely scattered and varied activities. This article describes the work on board one of the sea-going dredges. (Page 20).

• • •

Getting ready to pour one of the world's largest castings calls for painstaking preparation to eliminate a variety of potential hazards. Here's how the operation looked to an eye witness. (Page 22).

• • •

The plant doctor and the nurse can do much more than treat injuries and illness. They can give the safety department valuable assistance in correcting accident hazards. (Page 24).

• • •

How do the safety man and the editor of the employee publication editor work together? This month's Industrial Safety Panel tells how several companies use their publications in reaching the whole organization through the printed page. (Page 26).

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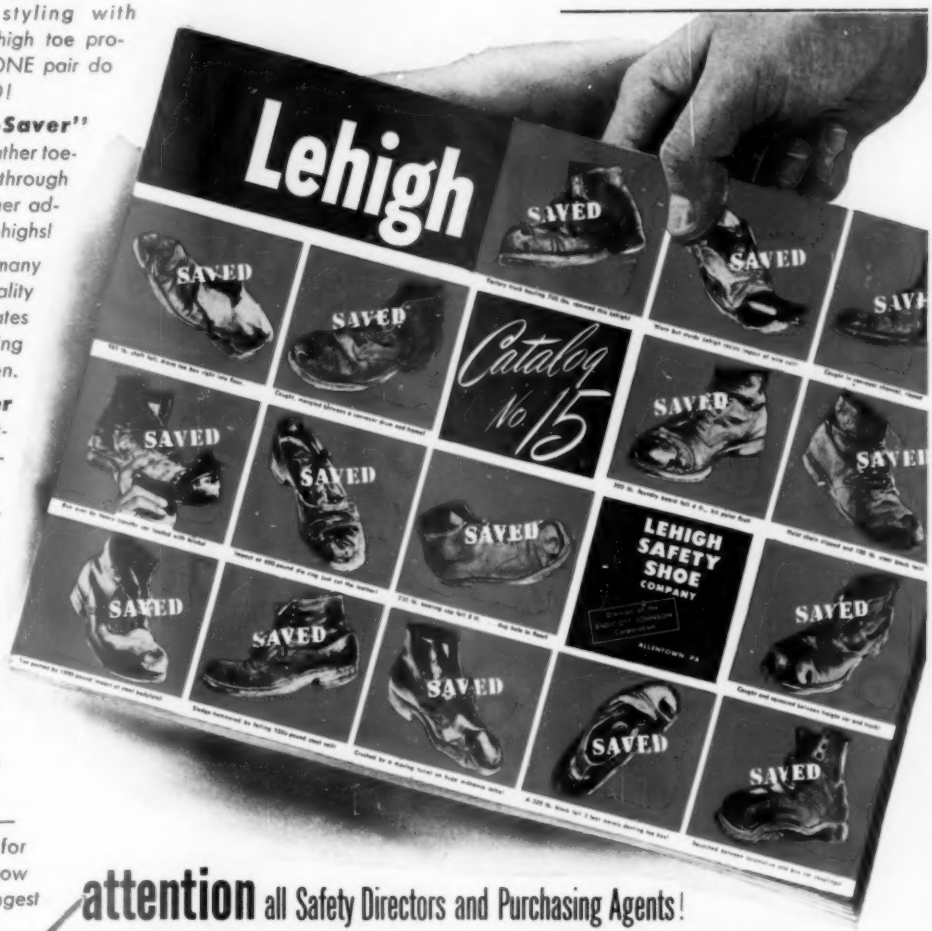

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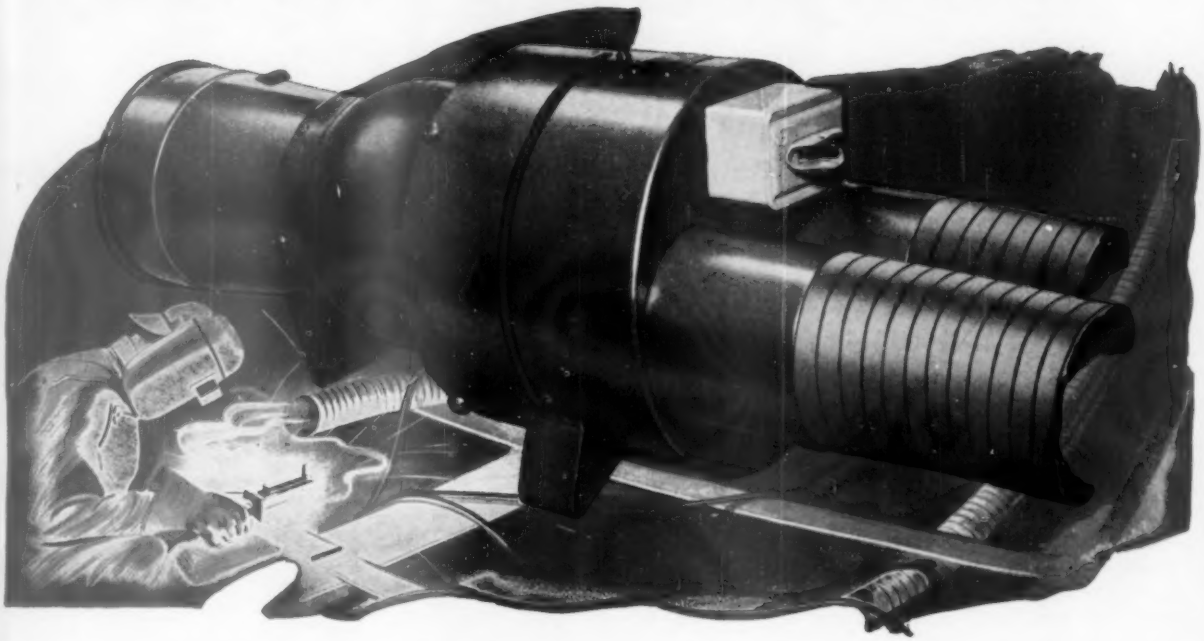

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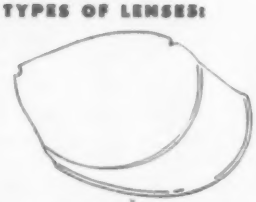

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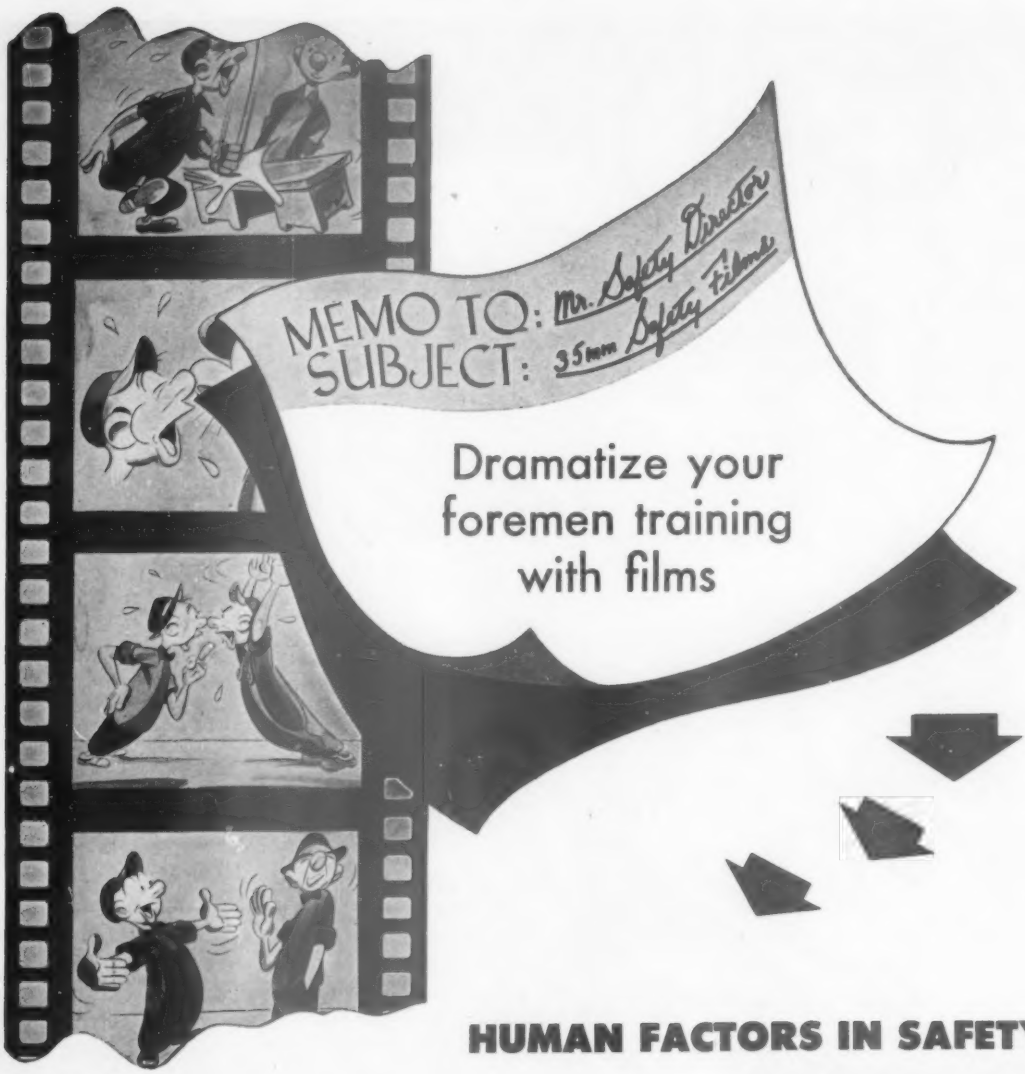

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The first definite historical reference to the wearing of glasses is found in the writings of Confucius, about 500 B. C.

Marco Polo, the explorer, who visited China during the reign of Khublai Khan, in the 13th century, A. D., also states that he found aged persons in the empire wearing spectacles with tortoise frames.

* * * * *

Those old Chinese spectacles were really GOGGLES, because they were made of plain crystal and simply shielded the eyes. So the wise old Chinese were the first to say "Wear Your Goggles."

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NATIONAL
SAFETY NEWS

FEBRUARY, 1950

Two Points of View

TWO MEN came into my office within an hour of each other recently. Both of them are veterans of accident prevention work. Both are capable, effective men, holders of key positions in their companies and in the safety movement.

Each of these men came to discuss a specific problem calling for immediate solution. And each, after the immediate problem was out of the way, chose to discuss his philosophic approach to safety.

The first man is strong, decisive. He is a product of the shop, successively laborer, supervisor, and high-level management man.

He said, "Ned, I was accused last week of having a one-track mind. A guy in our company claimed I was so hepped on safety that I overlooked a lot more important things in the company. I think he's wrong, and I told him so. Here are my reasons.

"When I was a punk kid swinging a sledge forty years ago, I made up my mind to get ahead. I made foreman easily enough, but then the competition began to look tough. Some guys were good organizers. Some were glad handers and self-promoters. Some were hard drivers. I bucked competition, not only from my fellow supervisors, but from the office crowd: accountants, research men, salesmen, engineers.

"So I looked around, very cold-bloodedly, for a field in which to make my mark—something that I could do that would make money for the company and that a hundred other guys hadn't thought of first. I picked safety—a screwball idea in those days in our outfit.

"I read all the stuff I could get hold of about safety and talked to all the safety men I could reach. In six months, I knew more safety than anybody in our company, and I applied what I knew in my own department. In a year, I had a record that was so darned good that the front office called me in. I became plant safety director—the first one the company ever had. And I made money for the company.

"In another year I was put in charge of safety companywide. I kept on making money for the company. I cut costs. I suggested changes that speeded production. I've got the respect of employees.

"Safety's hard, practical business—good business. It's paid off to my company, to me, and, incidentally, to a lot of guys who would have been killed or crippled without my work."

The other man had always impressed me as a cool, reserved, impersonal sort. He has an impressive background of scholarship, backed by substantial practical experience. I would have said, offhand, that he would automatically reject any idea he couldn't prove with a slide rule or a chemical experiment.

Yet he described his philosophy of safety in these terms:

"I know we save some lives, prevent some property damage. Just how many and how much we don't know. But this is, to me, a minor part of the value of the work of the safety movement.

"The one tremendously important fact about our work is that it offers one of the best opportunities in our civilization for men and women to apply in practical matters the Christian principles of living in a cooperative effort to help each other. I think that this lesson of Christian living is the most important lesson our world has to learn. If we don't learn it, we're going to destroy ourselves."

Apparently these two points of view are in conflict. I suspect, however, that the differences are less great than the statements indicate, because, whatever their motives, these two men are walking the same road.

I would, for many reasons, like to collect other safety men's philosophies. I would consider it a great favor if you would write me and tell me why you have chosen to devote *your* time and thought to accident prevention.

Ned H. Dearborn

Safety Starts in the Village

By C. R. STAHL

Throughout this community are signs of a program that includes both miners and their families

WHAT impresses the visitor to Helen, West Virginia, is that the safety program begins in the village itself. It reaches the people before they get to the mine. Informative posters on safety topics, safety slogans, and news pictures are displayed in prominent places so that the children and women as well as the men have an opportunity to become acquainted with their message.

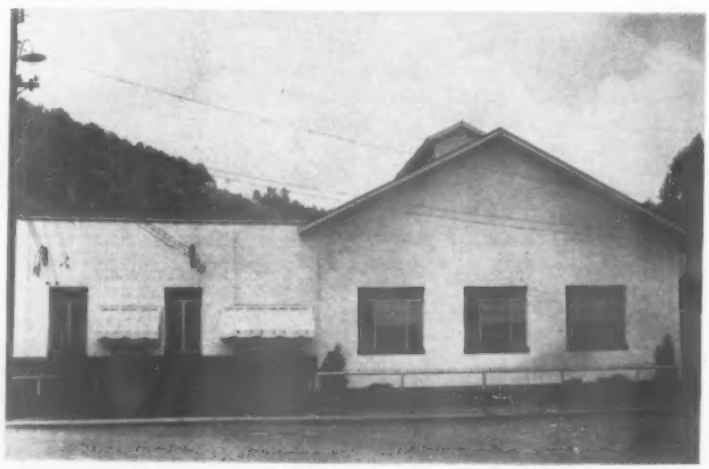
The operation — Stotesbury No. 11 Mine, operated by Eastern Gas and Fuel Associates—does not stop with displaying posters in the village; it puts the safety program in action to protect employees and their families and neighbors against reckless drivers.

The superintendent pointed out a blinker light which had been installed at a strategic point on the highway which passes through the village. An alert officer controls traffic on the main thoroughfare.

The mine has established a record of which the operating company is very proud and believes it to be unique. From the time the mine opened in 1941 to June 1949 there had been a total of 2,149,589 man-hours operated without a disabling injury due to a roof fall at the working face.

The safety experience of the mine as a whole has also been favorable. In recent years the average severity rate for coal mines entered in the National Safety Competition sponsored by the United States Bureau of Mines has been approximately 50 and the severity rate around 8. These rates are considerably better than the average for the industry as a whole. During the last two years Stotesbury No. 11 mine has had a frequency rate of 20.9 and a severity rate of 1.27.

Considering the fact that most mine accidents occur from roof



The combination lamphouse and bathhouse. To avoid obstructing the view of the men as they enter and leave the bathhouse, parking is not permitted. Waste containers encourage neatness and order.

C. R. STAHL, is Assistant to the Vice-president, East Gas and Fuel Associates, Mount Hope, West Virginia.

Panorama of Helen, West Virginia.

and rib falls at the work face, it is possible that the mine has set a record in this regard. The Pocahontas No. 4 coal seam is mined, and although most of the roof is considered "good," there are places with drawslate of varying thickness.

Stotesbury No. 11 Mine has a daily output of 1,650 tons of coal produced by hand loading on conveyors. It is operated on two producing shifts as well as a preparation shift. Crews on the latter shift advance conveyors, handle supplies and perform other work which may be done advantageously on this shift.

The modern bathhouse is conspicuous for its convenience and cleanliness. An up-to-date lamphouse is installed in the same building. An effort has been made to add to the attractiveness of the building by landscaping the grounds. Good housekeeping prevails throughout the mine yard and structures. Installations have been made with a view to permanence and safety. Aluminum paint has been used in liberal amounts on the substantial trolley wire supports. All of these efforts to improve the appearance of the property appeal to the eye and help to build morale.

Safety slogans have been painted on the walls of the change rooms and additional reminders are carried on an attractive bulletin board nearby. A permanent sign in the yard reads: "We want to provide a safe place for every man. . . . Report dangerous conditions to your foreman. . . . Don't take chances."

The Mine Rescue Team of Stotesbury No. 11 Mine.

Our experience has been that a man is in a receptive mood when management and supervision show an interest in his safety and well-being. It helps to promote a cooperative attitude which is reflected in willing observance of safe methods.

The general foreman was quite modest about the record, remarking that luck probably had a hand in it. But he he gave great credit to his subordinates who, he declares, have been constantly alert in anticipating potential hazards. He feels that close supervision at the face and the willing cooperation of the workers in complying with timbering requirements have been a tremendous factor in the mine's accomplishments.

Human nature being unpredictable, we sometimes find an individual who is indifferent about his own safety and his fellow workers'. These persons are not numerous but they are always a menace.

To prevent a slackening of safety measures, the shortcomings of the negligent individual must be brought to his attention. A first offender is brought to the general mine foreman and calmly but firmly warned of the possible consequences of violations. Usually he leaves with a promise to observe timbering requirements and other regulations.

If he persists in neglecting to

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Seagoing hopper dredge Chester Harding making a run to the disposal area with hoppers loaded with nearly 2000 cubic yards of dredged material.

Aboard the 'Chester Harding'

On this typical sea-going dredge of the U. S. Engineer fleet safety begins with every new crew member when he comes aboard

MAINTAINING more than 100 miles of the Delaware River channels that lead to the Port of Philadelphia—the nation's No. 2 port—is the work of the fleet of sea-going hopper dredges or pipeline dredges operated by the Philadelphia District of the Army Engineers.

In this fleet safety begins with every new crew member as soon as he comes aboard one of the dredges. Typical of the procedures used are those employed by Captain William Whittaker of the sea-going hopper dredge, *Chester Harding.*

The *Harding* is 308 feet long, 56 foot beam, 30 foot molded depth with a draft of 13 feet light and 19 feet loaded. It has a loaded displacement of 7,430 long tons. It can dredge to a depth of 65 feet, if necessary, and ordinarily loads approximately 2,000 yards of sand and mud in 23 minutes with its two side drags and two 20-inch dredge pumps.

With a speed of approximately 10 miles per hour light, each year this dredge digs and carries for disposal about 6,000,000 cubic yards of material depending upon the composition of the material and the distance it must be carried. The *Harding* operates around the clock five days a week and carries a crew of 68 men. Monthly exposure averages 11,000 man-hours.

After ten years of intensive campaigning, safety has become integrated with all operations of the ship. Abandon-ship drills, fire drills, rescue and resuscitation drills, safety meetings, first aid classes, and fire prevention inspections are just a few of the items performed regularly. Abandon-ship drills have reached the point of precision where it requires only five minutes from the time of the alarm until all lifeboats are safely overboard. Fire drills will produce eight 4-inch hose lines pouring water under 80-pound pressure in 60 seconds.

Another fire precaution is the carbon dioxide system that floods the holds with fire-smothering gas. This system is operated in such a manner that a warning is given to the crewmen in the hull to permit their departure before operating the controls that force the carbon dioxide into inaccessible locations.

Regular inspection of fire-fighting equipment is performed by the crew. This includes the alarm system, all types of extinguishers, fire pump, hose lines, fire hydrants, bulkhead doors, and auxiliary equipment such as hose, axes, ladders, and gas masks. Detailed records are kept on the condition of the equipment and the dates of inspections.

To stimulate competition among the dredges, a regular feature of the employee magazine, *The Binnacle,* is a listing of the safety standings of the dredges. Those with the best records are authorized to fly the safety pennant. This

Carl Kruger, a new deckhand, being indoctrinated by Capt. William Whittaker concerning his duties and station in the event of an emergency. He will receive a booklet containing these requirements for further study.

pennant contains stars indicating the number of man-hours worked without a disabling injury.

Another important feature of the safety program is the work of the district medical officer, Dr. John N. Negrey. All employees receive medical examinations before employment and food handlers are examined periodically. Medical service is always available for emergencies, and prompt and adequate treatment for injuries has cut time lost.

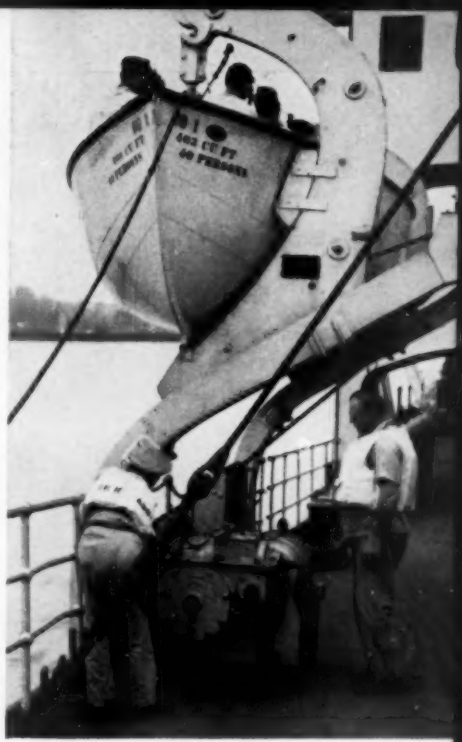
The safety record of the district reflects the sincere interest of the district engineer, Colonel F. F. Frech who has consistently supported a well-integrated safety program. Responsibility is delegated to the operating supervisors who are held to account for injuries to their subordinates. This has resulted in a steady decline in accidents and increasing interest in safety among the crews. For 1948, with nearly 2,000,000 man-hours worked, the accident frequency rate was 3.3.

Under this system, the district safety engineer, James L. Cox, is able to concentrate on the development of the program, and provision of safety engineering service and coordination of all safety activities for the district engineer.

To determine causes and plan future preventive measures, all accidents are investigated by the district safety engineer. Sometimes a hazard can be corrected by improved design of equipment. Therefore, all plans for new dredges are reviewed to make sure that all essential safety features are included.

Since all dredges for the Army Engineers are designed by the Marine Division of the Philadelphia District Office, this procedure is resulting in steady progress toward accident-proof dredges.

Thomas W. Parker, first assistant engineer, at the controls of the carbon dioxide fire-extinguishing system.



Mate John T. Williams operating electrically driven davit mechanism which lowers the boat into the water in a few seconds.

Capt. Whittaker leads shore-bound party down light-weight metal combination accommodation ladder. This ladder features retractable steps with abrasive treads.

Walter Gerlock, Jr., and Francis J. Lynch, operate the carbon dioxide hose reel system located on deck adjacent to electrically operated equipment, such as lifeboat davits, anchor winches and cargo booms.

End ladles pour into runners that lead the molten stream to the mold, directly under No. 1 ladle. Note special work platforms.

The BIG POUR

By BILL ANDREWS

(Photos by NATIONAL SAFETY NEWS *staff photographers)*

Safety planning is essential for the successful pouring of 300,000 pounds of molten steel for a single casting

YOU could feel nervous tension easing off, like a tight spring loosening as the pressure is released slowly.

There were cigars on the superintendent's desk. His office gradually filled with the key men of the plant—men looking tired, men glad to slump into chairs, light up, lean back, and say to themselves, prayerfully,

"We made it! It went off. Nothing went wrong."

They had plenty of reason for self-congratulation. These men, the leaders of a working team, had just seen 303,000 pounds of molten steel poured from three ladles into a single mold—steel that came from three furnaces in two different foundries. None of these men—and few if any foundrymen anywhere—had ever seen a steel pour that big.

Now that the job was done—except for a 25,000 pound follow-up pour in the afternoon, the setting of a "hot top" to keep that riser molten — these men were ready to tell the story of weeks of work that went to making 14½ minutes of pouring time go smoothly and without a hitch.

Continental Foundry and Machine Company's East Chicago plant had received the order weeks before—an order for a 300,000 plus pounds anvil block for a large power hammer. Anvil blocks are a staple item in this foundry—but not blocks that big.

Active planning in the plant began six weeks before the pour. The pattern was a major problem —the weight of molding sand involved called for special bracing of the pattern to prevent collapsing during the molding operation.

As a foundation for the mold, a huge bottom grid was placed in the bottom of a deep pit. On this, ten successive flasks were placed, and the molding sand packed between pattern and flask walls.

An elaborate arrangement of ingates — 10 in all — were built into the mold as it rose. The ingates for the bottom of the casting were fed by runners leading far to right and left of the mold proper. In the picture of the pour on this page; only the center ladle is above the mold—those to right

For good measure, separate pour (below) fills 'riser'.

With the job completed and three-electrode 'hot top' in place (right), inspection is made by (left to right) J. D. Holtzapple, personnel and safety director; William N. Davis, NSC engineer; Bill Andrews, editorial director for NSC, and James Murray, general foreman at foundry.

and left pour into the extended runners just mentioned.

Molding was a two-week job, and the finished mold and flask soared 20 feet above the floor of the pit. This part of the job ended with 48 hours of drying of sand with hot air. The least trace of moisture in the sand would mean explosion at the moment of pour, probable death, certain tremendous economic loss.

Working space for the ladlemen was constructed around the flask and at each of the other pouring cups. Each man at the pouring cups was allotted a working platform—steel covered with sand. And each man had his prearranged escape route in case of trouble, including ladders.

A week before the pour, a conference was held in the office of J. E. Johnson, Continental's general superintendent. Present were J. M. Murray, general foreman of No. 1 foundry where the pour was to be made; E. T. Croker, superintendent of the open hearth furnaces; J. D. Holtzapple, personnel supervisor; W. R. McNeeley, safety engineer; L. G. Gustafson, general superintendent; F. A. Dean, master mechanic; W. J. Cleary, production engineer; and J. W. Johnson, superintendent of planning and quality.

The agenda was one point—the big pour. The talk was production — and, inevitably, safety. There is no separation of these two ideas possible in an operation where gigantic masses of steel must be handled at temperatures ranging upward of 2900° F.

These men, the key men of the job, distributed responsibility for scores of final checks on the operation. The checks ranged from personal protective equipment to time schedules, from crane maintenance to the condition of the railroad tracks in the yard.

Every man stationed at the pouring cups was supplied new asbestos coats and leggings. There were hard hats, safety shoes, and goggles to be provided. The night before the pour, new cables were to be installed on each of the three cranes involved in the job. Hooks

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'Tapping the heat' at two open hearth furnaces simultaneously.

Industrial Medicine in the *Safety Picture*

By C. F. SHOOK, M. D.

Preventive maintenance for the human machine removes many of the causes of both injury and illness

THREE years ago, when I really entered industrial medicine, I felt very much like one of our newly elected congressmen whose motto has been "To be seen and not heard." But now, after many months of travel and study, I feel better qualified to discuss industrial medicine and its share in production and safety.

As part of my indoctrination course, I visited a large number of industrial companies, studying their medical layouts and discussing health problems with medical directors and plant physicians. I was very much impressed with the forward strides, especially during the wartime period.

Industrial medicine is not new, as I learned from an elderly doctor who had been physician for the Wanamaker Store in Philadelphia for some 40 years. It has, however, been very slow in growth due chiefly to a lack of appreciation of its value in production and its seemingly high cost. Briefly, let us examine costs in general.

Much as we all dislike statistics, let us look at some figures recently issued by the federal government. Industry spends about $75,000,000 a year on industrial health. The federal government spends another $5,000,000, and the state governments probably a like amount. This makes a total of perhaps $85,000,000. Now on the other side of the ledger, according to the Federal Security Agency, sickness and accidents cost the United States 8½ billion man hours per year and 27 billion a year in cold dollars. That is a lot of money in any man's estimation. It is a third more than we have appropriated towards the European Recovery Program and nearly twice as much as was spent upon education in the United States during the year 1948.

These figures are impressive. They serve as additional stimuli for us all to get in and save this loss. You know and I know that a large percentage of this loss could be prevented by a more aggressive or positive program of industrial health and safety. It must be a program developed, enacted and appreciated not only by management and labor, but by the medical service as well.

The Killers

A key speaker at the 1948 National Safety Congress commented upon the fact that accidents had reached fourth place in the causes of death each year. Accidents follow very closely behind diseases of the heart, cancer and lesions of the brain. These same statistics gave a darker picture when it came to their effect on our national economy. Accidents had reached second place in curtailment of the life span and first place in the production field. In other words, we were losing the men and women who can least be spared if we are to continue as an efficient producing country.

The speaker went on to compare the great strides made by medicine and the pharmaceutical industry in controlling infectious and communicable diseases. Each of us knows what vaccinations, the so-called miracle drugs and advanced medicine and surgery have accomplished towards better health and longer life. Therefore, you and I must make a like showing in the accident field.

What Benefits?

A short time ago I made a restudy of safety programs as reported by a large number of companies of various size and location. I read them very carefully looking for new ideas and new approaches to our problem. As a rule these program reports were written by top management in collaboration with safety directors, and these reports went into great detail. They interested me. I enjoyed their enthusiasm, especially with the proven good results they were getting. But not one report mentioned the value of a good medical service in producing these wonderful results.

Now let's take a recent survey by the National Industrial Conference Board where 333 plants of various types, locations and size were studied. Top management was asked, "What benefits are derived from your medical department operations?" The majority naturally reported upon improved health, efficiency and relations, but the answer "Promotes safety" was noted in 77 per cent of the plants.

Why this variance of opinion from like, if not the same, com-

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DR. C. F. SHOOK is Medical Director, Owens-Illinois Glass Company. This article has been adapted from a talk before the Safety Supervisors' Division, Detroit Industrial Safety Council.

panies? There is no question in my mind but that an adequate, up-and-coming medical service has had great effect upon reducing accidents and advancing safety education. The answer must be like the ethical doctor: we in industrial medicine do not advertise. Maybe we need a public relations division.

Just where does industrial medicine fit into the safety picture? First of all, if management is wise they have either the plant physician or nurse in attendance at major safety meetings, either as members of the committee or as consultants. These professional people have first-hand information upon accidents that safety directors and foremen may never find. The injured employee opens up and describes what happened to him when he first reports to the dispensary. His mind is fresh for details and he has not had time to realize the full import of his conversation. In a large percentage of cases the employee has erred in judgment, has practiced horseplay or carelessness. We further safety through immediate written records of this first reporting to the dispensary.

You who are interested in safety are not there to condemn the unfortunate employee: you are there to get the truth so that others may profit by the experience and repetition becomes less possible. The truth is what you are after, not for disciplinary reasons but for accident prevention. Thus the nurse's report is most valuable.

That is but one phase of the nurse's part in safety. She also treats eye irritations brought on by foreign bodies, vapors or eye strain. Her observations should point towards a need for an eye protection program, the removal of an irritating gas, or better lighting.

She is ever mindful of the so-called accident-prone individual, the unfortunate person who is always in the wrong place at the wrong time. By the nurse's records and by her observation, she may

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NSC PROFILES

MRS. GEORGE W. JAQUA

EVELYN HAGEMAN JAQUA (Mrs. George W. Jaqua) was elected vice president for women's activities of the National Safety Council at the 37th National Safety Congress to succeed the late Mrs. L. K. Nicholson. She is prominent in club activities both nationally and in her home state of Indiana.

She was born at Muncie, Ind., the daughter of M. L. and Carrie Elizabeth Dill Hageman. She married George Wesley Jaqua and is the mother of four children, Marjorie H. (Mrs. George D. Rodgers, Jr.), William M. (deceased) Elizabeth Anne, and Edwin S. Jaqua II.

Mrs. Jaqua was educated in Muncie public schools and is a graduate of Ward Belmont College, Nashville, Tenn., and the School of Expression, Boston.

Among the many activities that have helped absorb her boundless energy, organized safety has always had a prominent part. She has served on the Indiana Traffic Safety Council since its founding, was its secretary two years and has served as vice president. She also served for years as a member of the women's Advisory Committee of the National Safety Council, and is at present chairman of safety in both the General Federation of Women's Clubs and the National Council of Women of the U. S. A. She is also vice-chairman of the National Committee for Traffic Safety.

Wartime duties kept Mrs. Jaqua busy in a number of fields. Under appointment by the governor, she served as director of the women's division of the Indiana State Defense Council. She arranged and directed a forum on national defense at the University of Georgia and was active in Indiana in war bond sales, nutrition, salvage, Care of Children in Wartime, United War Fund Committee, Red Cross and Bundles for Britain.

She has served as director for Indiana, and chairman for rehabilitation in the General Federation of Women's Clubs, and as president of the 8th District Federation. In the Indiana Federation of Clubs, she has served as president, first vice president, corresponding secretary and as chairman of committees on literature, community service, international relations, war service, Latin-American Fellowship, rehabilitation and safety.

She finds time for the business world as a member of the Indiana Economic Council and as secretary of the Jaqua Company of Winchester, Ind., the tomato canning firm headed by her husband. She and Mr. Jaqua travel extensively, having made numerous trips throughout the United States, Canada, South America, and Europe. She belongs to the Presbyterian Church and is an adherent of the Republican party.

Discusses

The Employee Publication

THE QUESTION:

What channels of communication and cooperation does the safety department have with your employee publication?

THE PARTICIPANTS:

E. S. BEAUMONT, director of safety, The Peoples Gas Light and Coke Company, Chicago; treasurer, American Society of Safety Engineers.

M. F. BIANCARDI, manager, Safety and Health Department, Allis Chalmers Manufacturing Company, Milwaukee, Wis.

W. F. BROWN, safety director, Consolidated Edison Company of New York, Inc., New York.

R. M. CORLL, manager of industrial relations, Weirton Steel Company, Weirton, W. Va.

R. H. FERGUSON, manager of safety, Republic Steel Corp., Cleveland, Ohio.

GEORGE A. JACOBY, director of personnel services, General Motors Corp., Detroit, Mich.; Vice-president, National Safety Council.

W. H. ROBERTS, superintendent of safety, Chicago and North Western Railway System, Chicago.

G. A. RILEY, supervisor of safety, American Brake Shoe Company, New York.

LEA P. WARNER, JR., safety engineer, Warner Company, Philadelphia; general chairman, Cement and Quarry Section, NSC.

AMONG the employee publications received by the National Safety Council each month are many in which the safety material is well chosen and effectively presented. Obviously there is close teamwork between safety and editorial staffs.

The topic for this month's Panel is not a controversial one. Its purpose is to show how safety men and editors are working together to promote safety on and off-the-job, and, by inference, the safety man's estimate of the value of the publication in furthering the safety program.

The companies represented in this month's Panel all issue publications which have been doing consistently good work in safety promotion over a period of years. Some have received certificates of merit from the National Safety Council.

The channels of cooperation between safety man and editor are not always formal nor clearly defined. Nevertheless, they are real and important and the experience of these and many other companies has demonstrated their value.

Is It News?

MR. BIANCARDI:

When the need arises to contact our employees on health and safety, we are fortunate in having at our disposal our company newspaper, *A-C Views*. We have a direct line of communication with the editors of our semi-monthly publication.

The publication, being in the form of a newspaper, our first consideration must always be "Is it news?" Not all of our material can take the form of news items, however, and the stories receive mention as the situation dictates. Some stories are most effective as editorials; others as cartoons, or perhaps as photographs in the pictorial page. News items of a plant-wide nature such as our current safety glass program, always make the front page and occasionally the headline.

In whatever category it may fall, the editors have always been generous with the space allotted to get the point across and this represents, on their part, a recognition of the "employee relations" value of safety. Cooperation of editors with the Safety Department has always been excellent.

Another channel of communication with the employees, although not of a direct nature, is the *Safety Highlights*, a monthly safety publication for

THE INDUSTRIAL SAFETY PANEL is an informal group representing various branches of industry. Each month part of its membership discusses some question relating to accident prevention principles and methods. The Panel is conducted by mail and participants have no opportunity to compare notes.

Personal views of members are invited. Statements presented here may or may not be expressions of company policy.

The limited sample of opinion presented in the Panel inevitably leaves some angles of the subject uncovered. Comments of readers will be welcomed for publication, also topics you would like to have discussed by the Panel.

supervision in which much of the material is designed to be passed on to the employees through their foreman. This paper is edited and published by the safety department.

Between these two publications we feel we are able to achieve satisfactory contact with employees.

All Safety Conscious

MR. BROWN:

We don't use — or need — formal channels. The half-dozen supervisors in Safety Bureau headquarters are all known personally to the staff members of *Around the System*. The two groups visit back and forth, as occasion suggests, and bat ideas around until someone comes up with a usable one.

Whenever we have something that looks like an item, one of the boys takes it to the editor. Sometimes this results in a small news piece; sometimes it gets dressed up into a feature article in words or pictures. Occasionally the editor says, "Nope, too dull. What else you got?" And maybe an entirely different idea will swim to the surface where we can catch it.

The magazine staff also initiates ideas, from time to time, and brings them to us to be knocked around until something comes of them.

The Safety Bureau has a little bulletin which is generally circulated and which goes to our employee magazine editor. Every now and then she lifts an idea out of it, talks it over with our boys, and presto! we have another safety feature.

We told the editor we were testing a new gas mask. Result: a cover picture for the magazine and a news story telling what we were doing about it.

I guess it boils down to the fact that we're all safety-conscious, we're all anxious to publicize safety effectively—and we all work together.

Stories That Are "Different"

MR. FERGUSON:

We in Republic Steel believe that the safety of our employees and their families is a round-the-clock job seven days a week. Off-the-job safety plays an important part in our program.

Our industrial relations, public relations and advertising departments work very closely. First, we make every effort to do a good safety job; then we feel we should reap the results of the cooperation our employees give in building up the good name of Republic.

Consequently our public relations department is on the lookout for stories covering safety that are just a little different. Figures and facts must be used, but there are many other items if you look for them. And Bill Martin, editor of *Republic Reports*, really looks. Several examples appeared in the last issue. An employee in a local plant developed a hobby of bicycle safety for the boys and girls of the community. That story carried safety into hundreds of homes.

A seasonal story on safety in hunting, showing actual safe practice in the field by several employees, again presented safety away from work. Our magazine is mailed to employees' homes and we know it is read by the family. There were items on two Republic men winning the President's Medal of the National Safety Council for resuscitation and on the corporation's plants winning 15 awards in the Council's Metals Section. These are more or less routine news items, but the close relationship has brought fine results in showing that Republic is a safe place to work.

We have a committee that checks all plants and mines for information. Looking for the unusual angle has brought results. In our advertising all pictures are checked for safety, and frequently we tell the public our safety story in paid ads.

Reaching 400,000 Workers

MR. JACOBY:

The stories on safety which are featured in practically every issue of *GM Folks* reflect the complete cooperation which exists between the employee relations staff responsible for the publication of the magazine and the personnel staff which is responsible for the safety activity.

Since the records show that employees are safer at work than they are in their activities away from work the editor of *GM Folks* and the safety direc-

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Reflecting and Luminescent Materials

Published by National Safety Council
20 N. Wacker Drive, Chicago 6

1. Reduced visibility is a frequent cause of accidents at night. Insufficient illumination and low reflectivity nullify or seriously reduce the effectiveness of safety signs, markings, and other accident prevention devices. Illumination has usually been limited to the most essential signs, such as exit signs, though it would be desirable for many others to be visible at night.

2. In recent years various light-reflecting and luminescent materials which can minimize hazards during darkness have been developed. This data sheet discusses the properties and uses of these materials.

Reflecting materials

3. Reflecting materials provide visibility by reflecting the rays of a source of light toward the observer. When the light source is removed, a sign or device made of these materials is no longer visible in darkness. Therefore, effective use of reflector buttons and reflecting coatings depends on a source of light, such as the headlights of an automobile, miner's cap lamp, or flashlight, and the position of the observer who must be approximately in line with the reflected light.

4. Reflector buttons are made of glass or transparent plastic with lenses or prisms designed to reflect light toward its source. In the case of traffic signs, the buttons are so designed that a cone of reflected light will be directed above the headlights to the vehicle operator's eyes. The buttons are separate units placed in rows or patterns to form letters or symbols. If the buttons are of the proper size and spaced correctly, they give the visual effect of continuous lines or areas of light.

5. Commonly used types of reflecting coating consist of minute glass beads or spheres uniformly distributed and embedded in flexible weather-resistant or painted surfaces. When illuminated, each sphere acts like an independent reflector button and the general effect is a uniformly brilliant area.

6. The concentration of light by reflector buttons and reflecting coatings into a narrow cone produces brilliancy, legibility, and attention value. Reflecting materials are as much as 300 times brighter than white paint.

7. A reflecting coating to which pigments have been added produces reflected colored light. Color reflecting coatings are available in silver, yellow, red, blue, and green so that standard color codes for signs and markings can be closely followed.

This Industrial Data Sheet is one of a series published by National Safety Council. It is a compilation of experience from many sources. It should not be assumed, however, that it includes every acceptable procedure in its field. It must not be confused with American Standard Safety codes; federal laws; insurance requirements; state laws, rules and regulations; and municipal ordinances. Reprints of all Data Sheets are obtainable from National Safety Council.

8. The American Standard Specifications for Industrial Accident Prevention Signs specify red for danger, yellow for caution, green for safety, black for directional signs, and any color except red or yellow for informational signs. Dark colors do not reflect as well as do light ones.

9. Polished metals embossed to produce a uniform pattern of small white spots over the entire surface, and white paint and enamel also have been used for signs. However, the reflected light is diffused rather than retrodirected in a cone toward the observer.

10. Reflecting materials have a long range of visibility in darkness. Letters 1 inch wide and 6 inches high made of a reflecting coating are readily seen for several hundred feet. The brightness of glass reflector buttons and plastic unit reflectors falls off rapidly as distances decrease from 200 feet, and signs made of such material become more difficult to read, particularly at less than 100 feet. At all distances, signs of glass beaded sheet material are brighter and more readable than painted signs.

11. Numerous uses may be made of reflecting materials to increase the safety of mobile equipment provided with headlights or searchlights. Traffic signs, traffic hazards, barricades, road mark-

ings, and bridge abutments may be indicated to operators at night.

12. Mines have used these materials effectively to improve the safety of motor haulage and for safety and directional signs (made visible by miners' cap lamps) and for designating hazardous locations. Reflecting tape may be used on clothing of workers exposed to the hazards of mobile equipment so that they will be visible to operators.

13. Smoke, fog, and bad weather do not impair the reflecting ability of these materials. The principal maintenance requirement, aside from the need for repairs caused by normal wear and weathering, is cleaning because the brilliance of the material is impaired by dirt. Ordinary dirt can be easily removed by scrubbing with soap and water or by means of any of the standard cleaners used for cleaning paint, such as trisodium phosphate detergent mixed with water in a 1 or 2 per cent solution.

Fluorescent materials

14. Luminescent materials, which include fluorescent and phosphorescent materials, become luminous in complete darkness after exposure to natural or artificial light. The impinging light disarranges the electrons which, in returning to their normal arrangement, give off light in the form of a glow.

15. Fluorescent materials glow only while exposed to ultraviolet light. There is no usable afterglow. When the electrons return to normalcy gradually and the material glows after removal of the exciting light, the material is phosphorescent.

16. The colors of fluorescent paints, tape, and plastics under ordinary light vary from white to tan but change to brilliant colors of a complete spectrum when exposed to ultraviolet light. For example, the pale gray will fluoresce an orange yellow. Red, green, and other colors can be obtained.

17. Fluorescent materials may be used advantageously where it is desirable for the eyes to be adapted to darkness, as in night flying or driving, and where electrical power is available for the production of ultraviolet light. Instrument dials made of fluorescent materials enable the operator to observe readings without glare and eye fatigue.

Phosphorescent materials

18. Phosphorescent materials glow after exposure to either natural or artificial light and, unlike reflecting or fluorescent materials, are luminous after the exciting light is extinguished. The intensity of the glow is dependent on the amount of activation and is observed best under conditions of total or near-total darkness and after the eye has become adapted to the dark.

19. About 15 minutes are required for the human eye to become dark-adapted. The eye also is more sensitive to some colors than to others; a light or dark blue color is more easily observed at night than, for example, a deep violet.

20. The low intensity of the glow makes phosphorescent materials suitable only for close viewing in darkness. A luminescent plastic exit sign 8 x 12 inches with letters ¾ by 5-½ inches can be read at a distance of about 20 feet by dark-adapted eyes.

21. The length of useful afterglow depends especially on the color of the pigment and on the intensity of the exciting light and time of exposure to it. Pigments giving an orange or yellow glow have a duration of 15 to 30 minutes; a green glow will last from 1 to 2 hours; and blue will last for 10 hours or more if excitation is 5 minutes at 1 foot under a 100-watt lamp. The useful afterglow gradually diminishes.

22. Phosphorescent daylight

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Figure 1. A reflectorized train control sign at a mine as it appears in daylight.

Figure 2. The same sign as it appears at night.

This operator is using precautions recommended for portable electric grinders. Wheel guard, furnished by manufacturer, is attached and in correct position. Operator is wearing goggles. Cable is attached overhead to prevent passerby from tripping over it and pulling machine out of control. Ground wire is presumably attached to grounding conductor. Operator is wearing short sleeves.

Maintaining

Electric Hand Tools

By JOHN A. HILL

IN 1948 more than a million and a quarter portable power tools were manufactured and sold in the United States and Canada.

Thousands of these tools have gone underground to mine valuable minerals. Others have gone high into the air to build skyscrapers. The ships that fly through the air, as well as those that travel on and under the seas, were built with power tools and carry their complement of tools for maintenance purposes.

Salvage jobs under water in our harbors, as well as maintenance of our streets and highways, all require portable power tools. These tools have also contributed a major share in the building of railroads and automobiles and many home appliances.

A high percentage of accidents involving operators of portable power tools result from lack of care or skill in using the tool. On-the-job training and improved supervision are helping to correct this stiuation.

Several years ago a man in an eastern plant was electrocuted while operating an electric drill. I was requested to sit in on the inquiry although the tool involved was not of our manufacture. The inquiry revealed that the drill had been used on the 4-12 shift the night before, that it had been raining during that period, and since the operation was outside, the drill probably had become damp.

This drill was turned in to the tool crib at the end of the shift and issued the following morning to the deceased. The tool crib man who issued the drill knew it was not wet on the exterior, but admitted it could have been quite damp inside. The victim was working on the same outside operation. He was standing on wet timber but not in water. Maybe his heart was weak but the shock he received when he switched on the drill motor proved fatal.

Certainly the tool crib attendant who received the tool in a wet condition the night before was guilty of contributory negligence, but he had never been given specific instructions about such tools. Actually, this man's death was caused by negligent management and supervision — failure to take advantage of safeguards provided by the manufacturer of the drill which would have prevented this fatal accident.

The manufacturer provides the

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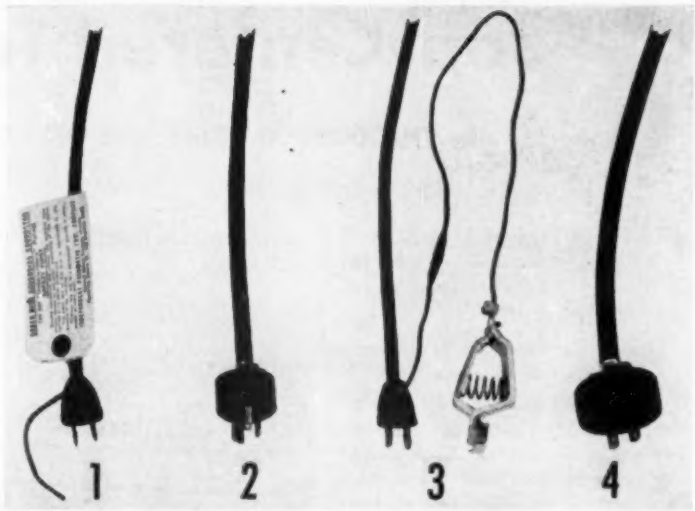
tool with a ground wire for one reason—to eliminate the hazard of electric shock. Unfortunately, this ground wire offers no protection unless properly utilized. Fatal accidents are rare, but an electric shock may cause an operator to drop a tool, injuring himself or a fellow workman.

Quite a number of plants are wisely using a three-prong plug on universal electric tools, and since this type of wiring system is grounded, they get protection from the ground wire automatically.

If your plant is not equipped with this system, there is a simple and effective substitute. Have a short length of wire attached to the ground wire and solder a common battery clamp to the end of the wire. This battery clamp can then be readily attached to any grounded object, such as a water or air pipe, conduit, or metal part of the building. Everyone who uses these tools should be specifically instructed regarding grounding.

A four-prong plug is used on high-frequency or high-cycle tools operating on 180 or 360 cycles. The manufacturer has equipped these tools with a four-conductor cable, as it requires three wires to carry the three-phase current for tool operation, and the fourth wire is the ground wire. This provides an automatic ground, as does the three-prong plug on universal electric tools. An occasional spot check of repaired tools should be made just to make certain that the repair man who disassembles the tools for repairs does not become careless when rebuilding the tool and fails to attach the ground wire to the tool. Also that in the case of three and four-prong plugs that he does not neglect to attach the ground wire to the ground prong in the plug.

Let us also give a thought to the electric cable and extension cables. When tools are stored in tool cribs, the cables should be loosely coiled and not twisted into tight compact braids. The same thing applies to extension cables. It is very important that these cables be inspected regularly and replaced whenever they show wear. It is cheap insurance against delays and also against freak accidents.



Types of plugs used with extension cords for portable electric tools. (1) Two-prong plug with ground wire. (2) Three-prong plug which offers protection from ground wire automatically. (3) Two-prong plug with battery clamp soldered to ground wire. Clamp can be attached to water pipe or other grounded object. (4) Four-prong plug used with operating on 180 or 360 cycles.

Torque reaction, or kickback, in use of portable nut-setting tools, has been overcome in recently developed electric and pneumatic impact wrenches. Torque reaction is absorbed within the tool. Use of ground wire is especially recommended for set-ups where damp concrete floor might cause shock in case of a short in the tool.

A short time ago, we learned of one such accident. The operator of an electric sander suddenly found his sander without power. He laid the tool on the floor, carelessly allowing the disc to rest on the floor while he probed the suspicious looking cable for the trouble. Suddenly, the tool leaped into action. For a moment it was alive and on the loose—just long enough to hurl itself against a man's foot, the sharp edge of the sanding disc almost slicing off his little toe. The operator should have laid the tool on its back; he should have released the lock on the momentary trigger. But the accident could have been prevented in the tool room by proper inspection and replacement of defective extension cables.

Remember, when your portable electric tool left the factory it was free of grounds and shorts, but in operation it can develop these defects due to moisture, carbon and copper deposits from the brushes and commutators and metal particles and dust in the air. A short in the electric circuits in portable tools not only causes serious damage to the tool, but frequently the

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Job-Centered Training

By THEODORE A. SIEDLE and GERARD O. GRIFFIN

Courses held at the work site and keyed to local needs put safety across on field construction

GETTING safety across, anywhere, is not an easy job. In field operations it is even more difficult. But it can be done!

Dravo Corporation's Contracting Division has developed a ten-hour series consisting of five on-the-job safety meetings. These sessions, part of a general training program for supervisors, are designed to promote full understanding of and compliance with the company's basic safety policy.

Meetings are held near the work site. With discussions thus job-centered, inconvenience of travel and loss of time are avoided—losses that result frequently when supervisors are brought into a central office for training.

With the aid of specifically designed readable charts, and well-selected slidefilms and motion pictures, the conference moves along at a good pace. Maximum participation of members of the group is engineered under the plan. Supervisors like that. They appreciate the chance to get their ideas out into the open.

Materials are not canned; they are tailored to the job. To pinpoint discussions, changes will be made in some of the leader material from job to job. For example, illustrations used on a lock and dam job, which Dravo is doing for the U. S. Corps of Engineers at Morgantown, W. Va., where the pilot program was recently completed, are not altogether applicable to a similar project at Braddock, Pa. The supervisors, of course, are different, and must be given illustrations in keeping with their interests and background.

Hazards of construction operations are discussed by the leader during the third meeting of the training course—"Men, Monkeys, or Elephants?"

The method of handling workmen's compensation in the two locations is different because of variance in state laws. Job conditions, while similar, present peculiar problems which require their own specific treatment. The core material of the meetings is the same, revolving around a common theme. The individualized examples are different, resulting in group-centered interest.

As the pilot run was satisfactory, arrangements are being made now to schedule the program for the Contracting Division's other jobs. It may also be used, with some revision, in two other Dravo units.

Gerard Griffin, safety director (left) and Orval Auhl, general superintendent, Dravo Contracting Division, look over material for the training course.

THEODORE A. SIEDLE is Staff Advisor on Training and Education and GERARD O. GRIFFIN is Director of Safety, Dravo Corporation, Pittsburgh, Pa.

There are five meetings in the series:

1. Keeping Out of the Red
2. Horsepower and Horsesense
3. Men—Monkeys or Elephants?
4. An Ounce of Prevention
5. Getting Safety Across

The conferees move easily into a discussion of common safety problems through varying the approach and stimulating interest without labeling the obvious. At each of the sessions pertinent and timely, down-to-earth charts are shown to "talk for themselves" and make the job easier for the conference leader.

A different leader conducts each meeting. Stress is placed on the practical elements of safety by having among the leaders the general superintendent and the general plant superintendent of the division involved.

The kick-off session sets the stage for developing and furthering safety consciousness. Facts supporting the need for emphasizing safety are drawn from the group itself by having the conferees estimate, for example, the number of deaths, permanent or partial disabilities, and lost time accidents resulting annually, first, throughout industry and, secondly, in the construction field. The actual figures are then shown to the conferees. This technique drives home the points more effectively than can be achieved by verbal presentation.

The effects of accidents—physical, mental, and financial—are also visualized. The cost of accidents to employees and company alike are discussed. Also, the broad basic elements of a safety program are covered—accident prevention, care of injured, and investigation and reports. Naturally, stress is placed on the responsibility of the supervisor in all three phases.

"Horsepower and Horsesense" brings out the hazards in the use of powered equipment. In this meeting, in addition to charts, a sound slidefilm, "Construction Equipment Safety," distributed by National Safety Council, is used. In the third session, "Men—Monkeys or Elephants?" unusual construction injuries, not involving mechanical equipment, are analyzed. Actual incidents on previous jobs are recalled. Supervisors who were on the scene are asked to describe the accidents in their own words. "The Safety Sleuth," a motion picture produced by M-G-M, shows humorously, yet forcefully, that accidents frequently result from improper training or failure to follow safety instructions.

The "hand-in-glove" relationship of good housekeeping to fire and accident prevention is emphasized in the meeting entitled, "An Ounce of Prevention." Supervisors are shown graphically that "a cluttered-up work site is not an indication of work activity. Orderliness and cleanliness are generally found in efficient, economical, and safe operations." A sound slidefilm, "The Fire Thief," another National Safety Council production, does much to stimulate discussion.

Each session packs a real punch, emphasizing one or two different phases of safety. The closing get-together, "Getting Safety Across," highlights the point that safety, together with quality, quantity, and cost, is a part of every supervisor's job. A brief discussion on authority and responsibility shows supervisors it is their duty to give training, issue "work orders with safety" and see that the safety doctrine, built on the corporation's safety policy, is carried out. The challenge of safety training and supervision is placed squarely on the shoulders of the foremen. A Zurich Insurance Company film, "Mostly Personal," points up the value of going behind surface facts as well as using a sound human-relations aproach with employees in putting safety across and bringing out the best in them.

A short quiz or "memory teaser" is given after each meeting. These are used, not as a check-up device, but rather as an aid in driving home important points. The "memory teasers," consisting of true-and-false and multiple-

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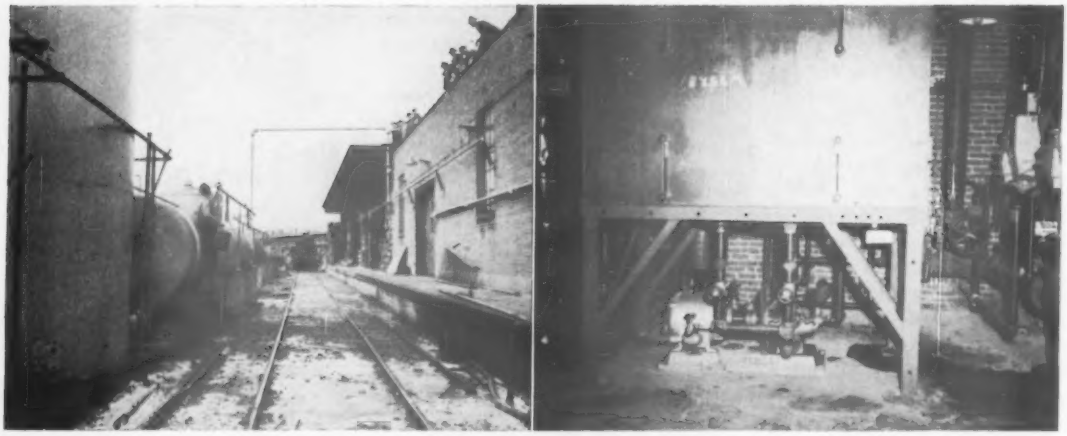
the LIGHTER SIDE
THAT'S GOOD OLD ED JONES ... A MAN WITH BOTH FEET ON THE GROUND!
NOW WHAT'S WRONG? I TURNED THE MACHINE OFF BEFORE I CLEANED IT!
AMBULANCE
FOR THE LITTLE CUTS, HERMAN, WE GO GET FIRST AID. WE DON'T CALL AN AMBULANCE!

A laborer applying for a factory job struggled throughout the application form and came to the query, "person to notify in case of accident." He wrote, "Anybody in sight."



Left: Siding, tanks and loading platform of Schenectady Varnish Company protected by automatic mechanical foam system. Right: Foam storage tank, injection pump and automatic deluge valves.

Mechanical Foam Tames a Fire Hazard

BLANKETS of carbon dioxide bubbles, chemically formed, have been used for many years for extinguishing fires in flammable liquid storage tanks and similar hazards. The chemical foam, although an excellent extinguishing agent, has been limited in its scope of protection due to its lack of adaptability to simplified system design.

Shortly before World War II, a more adaptable substance was developed. Foam formed by this new method consisted of mechanically formed bubbles in place of chemically formed carbon dioxide bubbles. Huge quantities were used by the armed forces during the war.

Of several materials used to produce mechanical foam, the most popular and stable material is a hydrolized protein made from a soya bean base. When mixed 6 per cent by volume with water and aerated, this material forms a homogenous tenacious foam blanket capable of flowing around obstacles and quickly extinguishing fires involving gasoline, benzol, naphtha and other flammable liquids.

This material is employed in the recently installed automatic fire-extinguishing system at the Schenectady Varnish Company, Schenectady, N. Y. The company

Foam coverage after two minutes of test.

Foam blanket after three minutes' operation.

manufactures varnishes and synthetic resins of the alkyd and phenolic types.

Oils, thinners and other flammable liquids used in the production of varnishes are stored in vertical and horizontal tanks along a 450-foot private railroad siding upon which tank cars stand waiting to be unloaded.

The basic problem was the control and isolation of a spill fire which might occur at tank car unloading locations and flammable liquid storage tanks on the 25- to 40-foot-wide railroad spur located between the plant and the main line of the railroad. Materials as light as naphtha and benzol are handled in this area which is practically inaccessible to city fire department operations.

The system is designed to detect automatically a fire anywhere along the siding, including the tank farm, and automatically lay down a foam blanket to an ultimate depth of 21 inches without manual operation. Should fire spread to an adjacent area, a reserve supply of foam-making material can be directed to that area where a foam blanket of similar depth is automatically laid down.

The system also automatically summons employees or watchmen so that they may be on hand if additional fire-fighting assistance with portable foam lines should be needed in case the fire extended beyond the areas protected by the automatic protection.

Other features of the installation include the sounding of an alarm in case a fire control valve is shut, or the fire detection system has suffered mechanical injury or has been tampered with. Even if the power supply to the foam delivery pump is interrupted for only a few seconds, an alarm warns of the condition.

This application of mechanical foam was designed according to the requirements of the Factory Insurance Association. It was jointly developed and engineered by the Automatic Sprinkler Corporation, of Youngstown, Ohio, and National Foam System, Inc., Philadelphia.

The Safety Valve

Motivation

MOTIVATION is one of those words that roll glibly off the tongues of psychologists. It's a very useful word to those who are trying to influence people not to kill or injure themselves.

Our fellow laborers in health education are up against the same problem. One would think that any normal person would be willing to exert a reasonable amount of effort to keep safe and healthy. But the experts aren't so sure.

In the *American Journal of Public Health*, Dr. Iago Galdston of The New York Academy of Medicine digs into the human mind to see what influences people. Substitute *safety* for *health* and many of his remarks apply to our job. Safety and health education have gone through similar phases.

First, the era of crude, bare, shocking facts, starkly presented—pickled tuberculous lungs and pictures of venereal lesions. Safety propaganda of the recent past has used some blood-curdling art, too.

Next, the sugar coated era. Injunctions were more palatable when crooned in jingles with banjo accompaniment. That is the technique of the huckster, says Dr. Galdston who confesses that he has used it. But it is exogenous motivation—the external variety. The really effective kind must be generated within the individual.

And the individual is subject to complex and continuously varying patterns of motivation. Getting away from professional jargon, it merely means that every person changes from day to day, and that what appeals to him today may fall flat tomorrow. Is it any wonder, then, that mass education is no cure-all?

Dr. Galdston once ruffled the feelings of an earnest young educator who deplored the fact that young women spent more money than they could afford on silk stockings (that was the pre-nylon age) and not enough on milk. The doctor, being a realist, defended the girls.

After all, he argued, if the prime business of a young woman is to get a husband, and such lures as silk stockings and lipstick are necessary in achieving that result, isn't she quite right in giving them priority? Moreover, the educator should have known better than to get trapped in such a hopeless alternative as stockings vs. milk.

Too often educators have assumed that people are eager to be healthy. Those who have studied the human mind know it isn't so. People want a lot of things, but unless they are hypochondriac they don't crave health, pure and simple. When sick, they want to be rid of their illness—not just to be healthy but so they can go on with the business of living.

We need to develop more insight into the business of living, concludes Dr. Galdston. And that is a subject for several volumes.

Voice of Experience

A recent membership opinion survey drew many enlightening comments from Council members, including this penetrating observation:

"The female is a funny critter. Any safety device which she feels will interfere with her feminine attraction is nix. Be she 6 or 106, we should put more sex appeal in safety when dealing with women. I know—we use 90 per cent female help."

Carman Fish

A POOR BARGAIN

By BILL ANDREWS
(Fiction)

February 1, 1950

With half the supervisors in the plant on my neck, my new accident record system seemed heading for the rocks last month. They were complaining that the form took too long to fill out, that the data wasn't useful, that they just plain didn't like the whole thing.

The system survived the staff meeting called by Larson to air the gripes against it. But the terms of survival were that I would, in a hurry, amend the report forms so that they could be handled quickly.

In mid-January, the executive committee of our Section of the National Safety Council met in Chicago. Over lunch, I mentioned my headache to Mark, the staff representative of our section.

Mark looked at me sadly. "Man, he said, "haven't you got a file of Safe Practices Pamphlets?"

"Sure," I replied, "a very complete one."

"Well, then look up SPP No. 21. It's got the dope you want."

I did just that when I got back to the plant. There was the information, plus sample forms. The forms for supervisors to use has only seven questions relating to the accident, and a minimum of other information. Best of all, there was a separate, shorter form, for first aid cases, to be filled out by the nurse.

So, I ordered some of the forms from the Council, and they go into use today. I think they'll be used, and that they'll salvage the situation for us.

February 6, 1950

Larson asked me this morning, "How do you like the Diamond Casualty Company?"

I was a little surprised—it didn't occur to me that Lars, as v-p for manufacturing, even knew the name of our compensation carrier. I said, in an off-hand way:

"O. K. Joe Marint is their engineer—knows his stuff. I suppose there are half a dozen other carriers that would give us just as good service, but Diamond's had our business since before I came here. Any beef in the front office?"

Lars nodded. "Price," he said. "If it doesn't make any difference to you, I guess we'll switch."

I came back, quickly, "Just a second, Lars. I said there were some other companies who could do a good job. I didn't mean all of them. Who's bid on the business?"

Lars looked through some papers on his desk, then came up with a memo. "It's Lake Indemnity. They've quoted a price that's a good five per cent under our costs of last year."

I groaned inwardly. I don't know much about Lake, but I know it's small and that it hasn't much of a field staff in our neck of the woods. I didn't make any cracks, but I did ask, "How did they figure it? Did they get our classification changed, or is it a retrospective rate, or a straight experience rating?"

Larson grunted. "How do I know? I got this memo from the insurance manager, telling me he can save five per cent and asking if I've got any objections."

I thought a minute, then said, "Mind if I go talk to our insurance boys? This rate business is kind of tricky, and we ought to have more dope on it before we go ahead."

Lars agreed, and I went to see Robertson, our insurance manager.

"Yep," said Robertson, "I've got us a good buy. No chiseling, nothing underhanded. But the Lake people are willing to set up a contract with a rate based on our experience the last three years that's five per cent under what we

paid Diamond last year. What's more, we'll know exactly what our compensation insurance will cost us, while with Diamond we have a retrospective rating plan where we don't know till the year's over what we have to pay. This is a lot easier to budget and a lot cheaper. I don't see how we can turn down this offer."

I didn't put up any argument, but I asked Robertson for the figures and a little time to think it over.

Back in my office I made a close examination of the insurance cost figures and the Lake bid. I also made a few phone calls, looking for opinions of some friends of mine who have done business with Lake. Finally, I checked my correspondence file to see just what service we'd gotten from Diamond in the last year.

By mid-afternoon, Larson, Robertson, and I were in the comptroller's office for a conference. I opened up with a discussion of the service Diamond offered and Lake could be expected to offer.

"The Diamond staff has been a real help in building our accident prevention program," I said. "Joe Marint makes an inspection every month routinely, and I can call him in occasionally outside that. I did call on him seven times last year. He has ideas. He looks at the plant from a fresher viewpoint than my staff can."

The comptroller looked at me coldly. "Your staff is expensive. It seems to me that it costs enough so that we can expect it do the safety job without outside help."

I replied, "I'm not apologizing for us. I think we do a sound and effective job. I'm only pointing out that in safety, as in production or accounting, an outside consultant is useful occasionally. Diamond supplies us with such a consultant as a service which accounts for a small fraction of our insurance cost. In addition to Joe Marint's inspections, however, Diamond has a completely equipped industrial hygiene laboratory. Last year, you'll remember, the union claimed there was a silicosis hazard in the foundry. Diamond sent in an expert to take dust counts on all suspected operations. Those counts gave us a clean bill of health—except for one location which was uncomfortably close to the danger point. We corrected that location with a minor revision of ventilation at a cost of $500. The improvements the union was asking for, before they saw the dust count figures, would have cost us about $5,000 and only the good Lord knows how much more we might have paid in unwarranted silicosis claims."

The comptroller growled, "We

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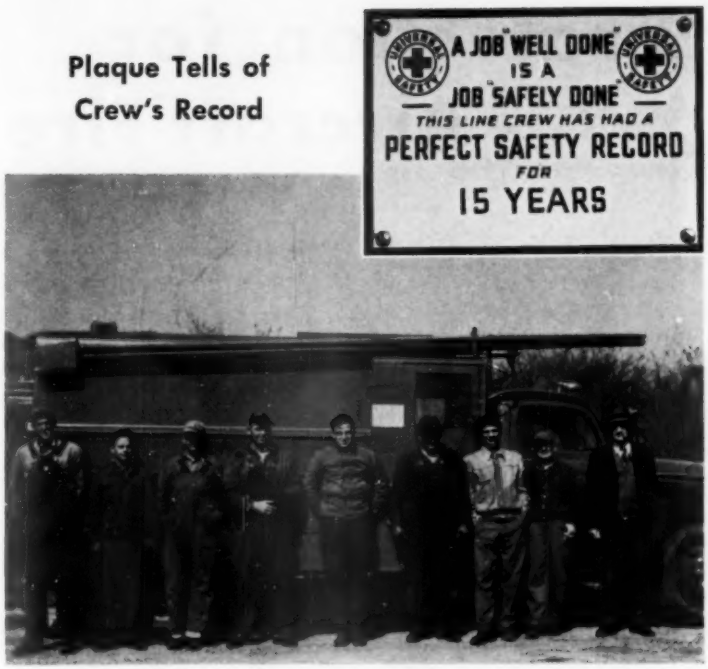
Plaque Tells of Crew's Record



Line crews of the Atlantic City Electric Company which have worked a year or more without a disabling injury carry plaques on their trucks telling of their safety record. In the illustration above is Foreman George Foster (extreme right) and his crew who have made one of the outstanding records in the company. The plaque (inset) which is mounted on the right side of the truck, shows 15 years without a disabling injury.

The plaques are made to order at a moderate cost. The number of years is painted in the space provided. This space is in a mat finish to hold the paint better.

A plaque is awarded to each line crew that has completed 12 consecutive months without a disabling injury. Should an occupational injury occur to a member of the crew, the plaque is removed from the truck and they must again complete 12 safe months before they can display it.

As a means of testing the employees' attitude toward this recognition, the company has occasionally delayed issuing the plaque. The crews have been prompt in calling attention to the oversight and regard the decoration with obvious pride.

The company also feels that displaying these plaques is an aid to good public relations. Comments in the press and from other sources confirm this.

Protection for Aircraft Fire Fighters

By JAMES E. WALKER

The U. S. Air Force's developments in fire-protective clothing are described briefly in this article. Details of the various investigations comprising these developments are contained in a number of technical reports, copies of which are available on request to the Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio.

PROBABLY no type of fire encountered by man is more difficult to cope with than aircraft fires. Military and commercial aircraft must carry aloft large quantities of high octane gasoline, some of the largest planes carrying more than 20,000 gallons. Add to this gasoline, substantial quantities of engine oil, grease, hydraulic fluid, etc., all in relatively frail containers, the whole moving at considerable velocity, and you have what might be described as "a conflagration going somewhere to happen."

Aircraft fires are usually associated with aircraft crashes. They occur with little warning or opportunity for preparation. Such fires develop rapidly and reach high temperatures more quickly than ordinary fires. Frequently, these fires involved entrapped personnel. In fires of such spontaneity, fire fighters and fire-fighting equipment must be fast, versatile and effective.

A large limiting factor in the effectiveness of the aircraft fire fighter has been the inadequacy of his clothing. The present Air Force fire fighter's garb consists of ordinary rubber boots, a two-piece suit of cotton duck or heavy cotton twill topped off with a pressed fiber helmet covered with asbestos or glass fiber cloth and incorporating a glass or heat resistant plastic face plate. In the past three years, an undercoat of glass wool batt contained between two layers of glass fiber cloth has been added to give a substantial improvement in thermal insulation. This one clothing assembly is employed for both fire-fighting and crash-fire rescue work.

In combatting aircraft fires it is accepted operating procedure to approach from the windward side. The fighters work their way toward the burning aircraft behind a protective screen of water, fog or foam from the fire-fighting apparatus. When trapped personnel are involved, all facilities are concentrated to create a path to the aircraft to permit a rescue team to rush in and bring out those trapped. Failure of the protective screen setup by the attendant fire apparatus, or a sudden shift in wind, may endanger rescuing as well as rescued personnel.

U. S. Air Force fire entry suit.

The dependence of fire-fighting and fire rescue personnel on fire-fighting apparatus for protection limits the effectiveness of these fire fighters and to some extent the effectiveness of the apparatus. The functioning of such personnel with inadequate "hit and run" type clothing, while in the best smoke-eating tradition, constitutes a constant hazard to the fire fighter and sometimes an insurmountable obstacle in the performance of his duties. In crash fires on soft ground or other areas inaccessible to the relatively heavy fire-fighting equipment, rescue of trapped personnel is practically impossible, as has been illustrated by several major crash-fires in recent years. The availability of adequate fire rescue clothing and personnel protective blankets would have afforded an avenue of escape to these people.

In recognition of the need for adequate and self-sufficient fire protective clothing, Headquarters,

JAMES E. WALKER is Chief, Clothing Research Unit, Aero Medical Laboratory, HQ Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio. This article has been condensed from a paper presented at the Air Transport Section, 37th National Safety Congress.

United States Air Force, in 1946, directed the development of a crash rescue suit capable of withstanding an arbitrary temperature of 2000° F. for at least 3 minutes without suit interior temperatures rising above 130° F.

Laboratory tests conducted to measure temperatures created by combustion of ordinary aviation gasoline disclosed that such temperatures ranged from about 1100° F. for gasoline burning openly over the liquid in still air to approximately 2150° F. for such gasoline burned in a blowtorch at maximum efficiency. Actual measurements of experimental aircraft fires yielded temperatures ranging from 1500° F. to 1900° F. It was concluded from this work that 2000° F. was an adequate maximum.

Investigations at the Air Materiel Command's Aero Medical Laboratory and correlative work at various educational institutions established that temperatures well above 130° F. could be tolerated by the human being without physiological disadvantage. The maximum limit of 130° F. on suit interior temperatures was recognized as conservative; however, this comparatively low limit was retained to compensate for expected high humidity within the suit.

In arriving at a practical time limit for exposure of the crash rescue suit to a maximum temperature of 2000° F., it was reasonably assumed that a properly trained and equipped crash rescue team could effect entry into the aircraft and accomplish rescue work with 3 minutes or less exposure to high temperatures. On large aircraft and multiple rescues, such teams could operate in relays.

The expected duration of exposure to high temperatures was recognized as a critical factor in development of a crash rescue suit. Within the functional and constructional limitations of the desired suit, it was considered impractical, if not impossible, to secure sufficient thermal insulation

U. S. Air Force radiation reflecting fire-fighting suit.

to maintain the stated 1870° F. temperature differential at thermal equilibrium. It was therefore concluded that the suit material would be designed to impede the flow of heat to the extent of maintaining the desired temperature differential for a given time. Such a suit would provide longer protection than 3 minutes at temperatures below 2000° F. and decreasing length of protection at temperatures over 2000° F.

In view of service conditions, it was presumed that the material for a crash entry suit should possess other significant characteristics in addition to resistance to thermal penetration. The suit material should be capable of withstanding temperatures of not less than 2000° F. for at least 3 minutes without significant loss of function; withstand abrupt and extensive changes in temperature, as much as 2000° F., without particular dimensional change or loss of physical properties; have the lowest possible weight and bulk consistent with its insulating function, thickness not to exceed approximately one-half inch; contain no components deteriorated by water, oil, gasoline, kerosene, carbon tetrachloride or other common solvents, fuels, lubricants or fire-fighting agents; contain a liquid and gas impermeable layer at or near the outer surface and a similar layer near the interior surface to prevent loss of insulating efficiency of the material by absorption of liquids or vapors; possess adequate strength, abrasion resistance, compressional resilience and other necessary physical attributes for its intended application. In addition, for the sake of application in all Air Force theatres of operation, the suit material should remain flexible and functional at temperatures as low as—67° F.

After a comprehensive study of commercial insulating materials, it was concluded that only the mineral fibers, asbestos and glass fiber, exhibited possibilities of satisfying the necessary functional requirements. Animal, vegetable and synthetic fibers all lacked the essential resistance to high temperatures; fireproofing or flameproofing treatments applied to these fibers, while useful in suppressing or retarding combustion, did not prevent decomposition and physical degradation. Numerous inorganic fillers were considered and, although several possessed desirable thermal insulating and high temperature characteristics, no satisfactory method could be conceived to shape and retain these fillers as a functional, durable suit material.

It was found that both asbestos and ordinary glass fiber began to lose strength at about 600°F. and practically complete loss of physical strength occurred at about 1500° F. A new type of high silica glass fiber of somewhat lower strength and durability than ordinary glass fiber but capable of withstanding tempera-

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Safety's Progress in Britain's Factories

By WILLIAM HOLT

Factory inspection has played a conspicuous part in a century of improvement in the nation's industries

A HUNDRED years ago Lord Peel told the House of Commons how pleased he was to report that fatal accidents in the cotton industry had been reduced to "three per cent." Imagine what an outcry there would be today, if three out of every hundred cotton workers were killed each year by textile machinery. Today, fatal accidents in the *whole* of British industry are less than .01 per cent.

Legislation on factory conditions started in Britain at the beginning of the nineteenth century. But up to 1833, the enforcing of the provisions of each Factory Act was the job of the justices of the peace. In that year four newly appointed factory inspectors took over—the first factory inspectors in the world.

At first, in those days, the public outcry was mainly against the long hours of work and the lack of education of children in the factories. Those early inspectors were magistrates and as they went around inspecting the factories, offenders were fined on the spot. The fines were used for the education of children employed in the factory, the inspector giving the fine to the schoolmaster.

There was also great need for regulations about guarding machinery. In those days the shaftings and cog wheels were not guarded and the factory inspectors were horrified by the dreadful accidents that were happening. Although they were shocked, however, they then had no powers to do anything about it beyond reporting these accidents.

When the early laws making it compulsory to fence dangerous machinery and shafting were passed, there was considerable opposition from manufacturers. The "National Association of Factory Occupiers," in 1855, considered that some of the overhead shaftings did not need fencing and they objected to it on the grounds of expense. But a large number of accidents constantly occurred. Charles Dickens, writing in 1855 in his magazine *Household Words*, indignantly labeled the Association as "The Association for the Mangling of Operatives."

I have mentioned that the early inspectors had the power to fine an offender on the spot. But there was an obvious snag—in those days the inspector was the prosecutor and also the judge. Today, although H. M. inspectors of factories conduct their own prosecutions in a court of law, it is the court now that judges.

What kind of men are British factory inspectors today, over 100 years since the first inspectors were appointed? To give you a typical example, take the factory inspector who comes around the town where I used to work as a

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WILLIAM HOLT, who is a BBC Industrial editor, is an ex-weaver, who began his working life in a factory at the age of 12. After serving in the First World War, he left his looms, went to Spain, painted pictures; was challenged to a duel; tutored a young duke. He sailed round the world before the mast; worked in the logging camps and sawmills of Canada. Then he returned to his trade in Yorkshire.

Time after time, he has left his looms, worked his way to the other side of the globe; sailed up the Yangtse-Kiang, traveled through Japan, the United States, Canada. He has been a cement worker in British Columbia, a teacher of languages in Seville and Berlin, coal salesman in Yorkshire. For seven years, as shuttle salesman, he traveled all over the Continent of Europe. He founded the first motor library companies in Britain.

He taught himself four languages while working, writing his exercises in the dust on the breastbeams of his looms with the point of his reed hook.

In Britain, as in other countries, early factory legislation, was often unpopular. Many employers resented "interference" in the operation of their factories, particularly in restrictions on child labor and the cost of health and safety measures. This petition of complaint about an early factory inspector is among the souvenirs in the Ministry of Labour's Inspectorate Department.

To the Right Honourable Sir ***GEORGE GREY,*** *Her Majesty's Secretary of State for the Home Department.*

WE, the undersigned, occupiers of Factories in the district of Mr. LEONARD HORNER, beg to submit that the conduct of that gentleman, from his first entrance on the administration of his office to the present day, has been harsh, unfair, and injudicious; has therefore naturally created a strong feeling of distrust towards him, and increased the unpopularity of an unequal and unpopular Act of Parliament.

The continuation of Mr. HORNER, in his office being, therefore, calculated to bring the law into still greater disrepute, and the Government into frequent, unnecessary, and injurious collision with the people, we earnestly solicit his removal.

"Cuts our cleaning costs more than $1200 annually"

"Cleans floor area size of city block in 6½ hours"

"Does 4-hour cleaning job in 30 minutes"

"Cleans 55,000 sq. ft. of floor in single day"

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OTHERS SAVE ON LARGE-AREA SCRUBBING ...Why Not You?

Now especially, with the need for cutting costs, savings such as are possible with a *Finnell Scrubber-Vac* are well worth investigating.

With a *Finnell Scrubber-Vac,* all four of the floor-cleaning operations can be done mechanically! This combination machine applies the cleanser, scrubs, rinses if required, and picks up. With one or two operators, a *Finnell Scrubber-Vac* can do a cleaning job better in half the time it takes a crew of six to eight using separate equipment for the several operations.

The model illustrated below, for heavy duty requirements, cleans up to 8,750 sq. ft. per hour. Has new type of water valve that assures uniform flow of water ... ⅓ more powerful vacuum for more efficient pickup ... a *Finnell-developed* trouble-free clutch, affording effortless operation ... improved waterproof wiring and fewer electrical connections, simplifying the cleaning of the machine. Vacuum performs *quietly.* The machine is *self-propelled.*

Have a talk with *the nearby Finnell man.* See what *you* would save with a *Finnell Scrubber-Vac.* Incidentally, it's good to know that when you choose *Finnell Equipment,* a *Finnell* man is readily available to help train your maintenance operators in its proper use. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2202 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

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FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

CAUSE AND CURE

These examples are from reports of actual accidents. They list the causes and the steps taken to prevent recurrence

Long Tail Line

Building materials worker climbed down into sand hopper to free frozen sand. Tail line of safety belt permitted long fall and he suffocated.

Correction: Workers were instructed to tie off tail lines short enough to prevent unsafe descent and to station helper at top to aid in case of accident.

'Sleeper' Falls

Heavy metal plate standing against wall of warehouse fell over, injuring leg of workman who removed crates that were holding it upright.

Correction: Retaining stanchions were erected to keep such plates in one place in storage room. Workers were cautioned to watch for "sleepers" in moving material.

Toe Fractured

Trucker placing dockplate between freight car and warehouse dock dropped heavy plate and it bounced on foot, fracturing toe.

Correction: Freight handlers were ordered to get help or use power truck for placing dockplates and were asked to wear safety shoes for foot protection.

Push or Pull?

Employee pulling four-wheel truck loaded with cartons took long stride and caught heel under truck, causing serious fracture.

Correction: All workers were reinstructed in safe methods of handling materials on hand trucks, being cautioned particularly to push instead of pull 4-wheel truck.

Falling Scrap

Piece of heavy angle iron left on top of blower housing jarred off as construction worker passed beneath, causing severe head injury.

Correction: Foremen cautioned all workers about picking up scrap material after jobs, especially where vibration could dislodge pieces. Hard hats were ordered.

High Tension

Rodman of surveying crew of highway department threw metal measuring tape across wire connected with high-tension line and was electrocuted.

Correction: Surveying crews were ordered to work out special precautions in work around high-tension lines, where metal tapes or metallic strands in cloth tape would be dangerous.

Safety Course at MIT

Under the joint sponsorship of the Massachusetts Safety Council and the Massachusetts Department of Education, Division of University Extension, an eight-week course in "Techniques in Accident Prevention" will be held at Massachusetts Institute of Technology beginning Tuesday evening, February 7. The subject matter will deals with techniques in eliminating specific accident hazards. National authorities in the field of industrial safety have been obtained as lecturers. Veterans of World War II who reside in Massachusetts may take this course without charge; to others there will be an enrollment fee of $10.

The course is under the direction of Edward L. Wilkins, director of industrial safety, Massachusetts Safety Council; John P. McGrail, supervisor in education, Division of University Extension, Massachusetts Department of Education, and Professor Edward R. Schwarz, chairman, M. I. T. Safety Council.

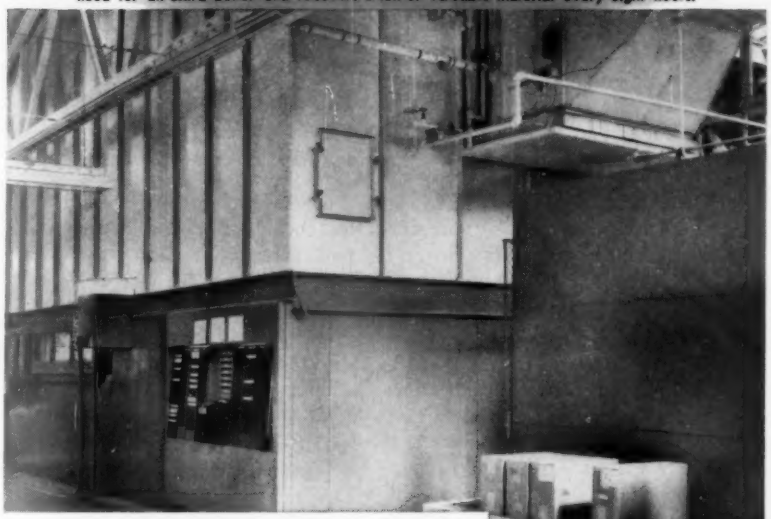
Safe Device for Dusting Clothes

Employees at the Ralston Purina plant in St. Louis no longer find it necessary to blow dust off their clothing with compressed air. Several of the units shown in

the illustration have been installed throughout the plant.

The box contains a Tornado hand model vacuum cleaner. The flexible tube has a brush nozzle that knocks the dust loose while suction draws it away. The discharge pipe is stuck out a window. The men like it and it's safe.

At Personal Products Corporation, *this "CJ" Pangborn Dust Collector eliminates need for an extra boiler and recovers a ton of valuable material every eight hours!*



How PANGBORN DUST CONTROL SAVES WINTER HEATING COSTS for Personal Products Corporation

PANGBORN Dust Control *does more* than stop dust, *does more* than recover valuable material at Personal Products Corp. The way E. W. Jochim, manager of Personal's Chicago Plant, figures ... Pangborn Dust Control saves the *cost of an additional boiler!*

Here's how:

With an ordinary system, dust laden air at the Chicago Plant would be exhausted outside. In winter, *35,000 cubic feet of precious heat a minute,* as well as dust, would be thrown away. An extra boiler for *heating alone* would be needed to make up the heat loss!

But with Pangborn Dust Control, *there is no heat loss!* In winter, heated factory air is *so clean* it can be recirculated throughout the plant. There is no need for an extra boiler . . . the dust problem is solved and *a ton of valuable material recovered every eight hours!*

How much can you save?

Just like Personal Products, chances are you can *save money* in more ways than one with Pangborn Dust Control. Find out now... a free Pangborn Dust Survey costs you nothing, carries no obligation. Get the details; write for Bulletin 909A to: PANGBORN CORPORATION, 290 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the Latest Developments in Dust Control and Blast Cleaning Equipment

STOP THE DUST HOG from stealing profits with Pangborn DUST CONTROL

Protecting Wood Ladders From Decay

SHOULD wooden ladders be coated with linseed oil, varnish, shellac, paint, or enamel? Or should they be left uncoated?

This question comes up frequently, and recent data from the Forest Products Laboratory of the U. S. Department of Agriculture should be of considerable value. The Laboratory warns users that on objects made of wood, including ladders, which are coated with ordinary paint, varnish, and other commonly used coatings, moisture may enter the wood by capillary attraction at the uncoated joints of rung holes and tenons. This moisture is then prevented from leaving the wood because of the more or less impervious coating.

"In some kinds of wood construction involving such joints," the Laboratory reports, "application of protective coatings may favor rather than retard decay."

Several proprietary chemicals known as NSP preservatives (NSP meaning non-swelling and paintable) are now on the market. These consist of a toxic chemical carried in a non-aqueous volatile solvent with or without the further addition of water-repelling ingredients. Those without water repellent consist typically of a solution of toxic in volatile petroleum solvent, such as mineral spirits or Stoddard's solvent, and in addition may contain a proportion of less volatile solvent, such as fuel oil to facilitate spreading the preservative through the wood.

Application

On receipt, the ladder is given a thorough visual inspection for possible defects. A suggested method of treatment is to heat the ladder in an oven or a small room, then immerse it for three minutes in the cool solution in a long shallow pan. Then it is allowed to drain and dry.

The solvent is flammable in the same class as kerosene, but when dry the ladder is not altered in combustible property.

When thoroughly dry the ladder may be coated with paint, varnish or enamel, if desired. These coatings may improve its appearance but will not materially increase its resistance to decay.

Formerly opaque coatings were condemned by the American Standard Safety Code on the grounds that such coatings made it more difficult to detect flaws. This unqualified objection to the practice, however, has been changed in the 1948 revision of the Code which states:

> Sec. 5.1.9. Ladders should be kept coated with a suitable protective material. The painting of ladders is satisfactory providing the ladders are carefully inspected prior to painting by competent and experienced inspectors acting for and responsible to the purchaser, and the ladders are not for resale.

If ladders are free from defects such as knots, cross grain, compression wood, pitch pockets, etc., it may be assumed that these defects will not develop after they are painted. Checks, cracks, splits and compression failures which may occur subsequently can ordinarily be detected through the coating, whether it is of varnish, paint or enamel.

Procedure

Based on the foregoing information, the following conclusions are presented by the Safety Department of the Consolidated Edison Company of New York:

1. All ladders upon receipt from the vendor should be delivered to the paint shop where, after approval by the purchasing department inspector, they should be given a treatment of water-repellent preservative as described above.

2. At the discretion of the department using the ladders, they may or may not then be coated with paint, varnish or enamel.

EDITOR'S NOTE. This article is based largely on a memorandum prepared by the Safety Department of the Consolidated Edison Company of New York, Inc.

Dust Explosions Cause Heavy Losses

Dust explosions in the United States are multiplying greatly, Hylton R. Brown of the U. S. Bureau of Mines, warned delegates at the recent Northeastern Conference of the National Fire Protection Association at Buffalo, N. Y. The fire parley was called by the NFPA to draw up plans to reduce alarming fire losses in the northeastern area.

Brown, an internationally known expert on dust explosions, said: "A dust explosion can occur in any industrial plant or manufacturing establishment where combustible dust is created. Approximately 28,000 industrial plants in the U. S. are subject to the hazard of dust explosions. These plants normally employ 1,325,000 persons, manufacture products of an annual value of more than $10,000,000,000 and represent property values of several billions of dollars. Although most dust explosions occur during operation of industrial plants, a number of disastrous explosions have occurred during fire-fighting operations. These explosions are usually caused by a cloud of dust being forced onto the flames of the fire, and in several instances have resulted in the death and injury of firemen.

"In the 193 dust explosions reported in the U. S. for the years 1941-48, 105 lives were lost, and the total property loss of more than $37,000,000 during these eight years far exceeds the loss during any previous similar period for which information is available. If dust explosion losses continue at the present rate, the total for the present decade will be more than three times the total for the previous 10 years."

National's Overhead Foam Spray Deflector shows its effectiveness in an outdoor demonstration.

Quickly, the Overhead Deflector spreads Aer-O-Foam over the fire, completely smothering the blaze.

FIGHT IT WITH NATIONAL

AER-O-FOAM

ACTS QUICK . . . PREVENTS FLASHBACKS . . . STOPS LOSS

Day or night . . . in plants or warehouses, when fire strikes it means loss of material . . . valuable irreplaceable equipment . . . and production. Proved fire protection is the safest continuous production insurance today.

You can safely protect plants and equipment with National Aer-O-Foam's "industry-proved" Overhead Spray Deflectors. They are easily installed over those points requiring foam fire protection . . . spray directly on the fire. Stop serious losses before they happen.

National Aer-O-Foam forms a thick, tough, long-lasting airtight blanket of foam that snuffs out flames . . . insulates threatened areas and prevents flashbacks. At the same time, Aer-O-Foam is non-corrosive—is easily washed away with hose stream, or after drying can be readily brushed off machinery, walls and floors.

National Foam manufactures chemical as well as mechanical foam and the equipment for applying them. Expert fire equipment engineers are ready . . . willing . . . and able to help you engineer fire protection. Remember, to stop a fire . . . start the foam.

NATIONAL FOAM SYSTEM, INC.

Headquarters for Foam Fire Protection

Packard Building. Philadelphia 2. Pa.

The Industrial Safety Panel

(From page 27)

tor work together to promote safety not only in the plant but in the home, on the highway, in recreational activities and while on vacation.

A recent issue of *GM Folks* is typical. A well-illustrated, two-page spread featured the first-aid training given to key employees. Two instances were cited in which this training received in the plant had paid off in the saving of lives of small children in the home.

Health maintenance and fire prevention are activities closely related to safety and this same issue of *GM Folks* contained an article by one of the plant medical directors on "Blisters — Handle Them With Care" and the center spread was devoted to fire prevention under the title "It Is Good Job Insurance."

Within recent months this employee magazine, with a circulation among more than 400,000 employees, carried illustrated articles on "Safety In The Office," receipt by General Motors of its fifth Distinguished Service to Safety Award from the National Safety Council, a campaign to encourage teen-age driving safety, "Safety While on Vacation" and one on "Motor Manners." A regular feature of all issues is a "Safety Last Louie" cartoon. Safety is also featured in the annual report to employees.

The Employee Relations Staff made a very significant contribution toward safety during the year 1949 when it installed information racks in General Motors plants and kept them filled with booklets covering a wide variety of subjects. In this connection, hundreds of thousands of booklets on various safety subjects were distributed to employees.

In addition to these corporation-wide activities, many plants have their own employee publications. Safety material is featured in these plant newspapers and also in employee handbooks developed by the particular plant.

Most Effective Medium

MR. BEAUMONT:

Most employees look for *Gas News* and read it thoroughly. There are many requests for extra copies. It is the most effective medium of getting a written message to the whole organization. Frequently I request space for safety topics and these requests are always granted. The editors also seek feature articles from time to time and give them maximum effect with good photographic and cartoon illustration.

The magazine provides space for "scribes" to publicize their departments and these folks mention departmental accident prevention accomplishments in their notes. Individual experiences in the use of goggles, safety shoes and other protective equipment are frequently recorded. In short, teamwork is a practice, not just a word, between Editor Charles J. Morse and those who assist him in the preparation of our magazine.

Mutual Interest

MR. RILEY:

Our job of putting safety across through *Brake Shoe News* is made simpler by the fact that the editor and myself are both in the company headquarters offices.

Each month I gather material which I would like to have in the *News* and give it to the editor. This material includes copy I have written — folksy safety talks, photographs of our plant people which put across safety messages, cartoons, contests, etc.

The editor often receives from correspondents material which can be included in the page and forwards it to me. Before each issue we talk over this material to see how it may best be presented. From here on he does the rest as far as layout and typography are concerned.

This material is usually included in the safety page, but sometimes parts of it are run as news stories when such treatment is warranted.

Before each issue goes to press, the editor gives me a set of page proofs, which I look over to make sure that nothing detrimental to safety appears in copy or pictures. We are especially careful not to run any picture of a man on the job without safety glasses.

To sum up, I would say that our channels of communication and cooperation consist of personal, day-to-day contact and a mutual interest in the importance of the safety content of the magazine. As supervisor of safety I am more or less an ex-officio member of the magazine's staff.

Plant Representatives

MR. WARNER:

Our publication was founded on the basis of acknowledging group records and individual achievement as well as news about the company, to the end that all may become better acquainted with the organization, its responsibilities to employees, owners and the public.

Since the editorial staff, the safety and medical groups are all part of the industrial relations department, it is easy for all of us to work together in preparing each issue. However, it is primarily up to our plant representatives to submit ideas, articles, photographs, etc., which we screen and adapt as needed.

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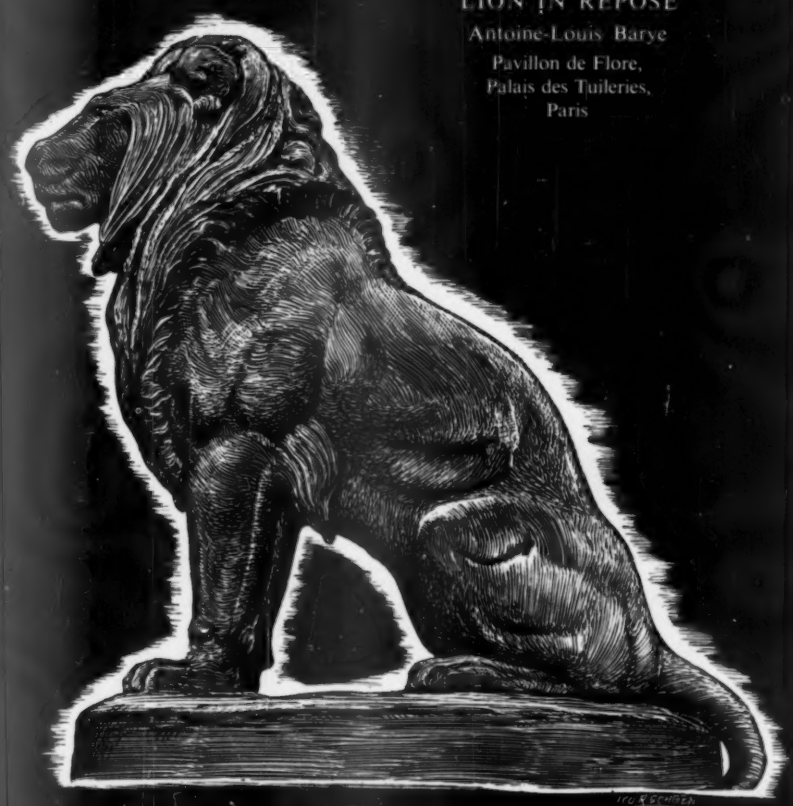
Surpassingly Great

LION IN REPOSE
Antoine-Louis Barye
Pavillon de Flore,
Palais des Tuileries,
Paris



"This majestic bronze — a masterpiece — is Barye's most famous creation."[1] One of history's more prominent artists — "certainly one of its greatest sculptors — he has in his way no rivals."[2] Barye's superiority, like that of any great craftsman, is achievement due neither to good luck nor mischance but is the result of constant, patient and tireless effort to attain the greatest degree of excellence.

Outstanding merit in any field is rewarded by acceptance and appreciation that creates unrivalled leadership. Fortunately, among occupational skin cleansers, Pax Heavy Duty has enjoyed and held the preference of America's greatest companies for nearly a quarter century because of its inflexible adherence to the highest standards of quality and performance. For cleansing efficiency, safety, economy and every other desirable factor Pax Heavy Duty remains unsurpassed.

[1]Among Sculptures, by Charles Louis Borgmeyer
[2]French Art, by W. C. Brownell

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GRANULATED SKIN CLEANSER

PAX-LANO-SAV* -a superior skin emollient combining lanolin and other special skin normalizers.

The Pax trademark symbolizes a deep-rooted tradition of superlative quality maintained through almost a quarter century of continuous research and development.

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Manufacturers of Fine Industrial Skin Cleansers

*Tradename of G. H. Packwood Mfg. Co.

In addition to PAX-LANO-SAV HEAVY DUTY, PAX also offers the following powdered or granulated quality skin cleansers: PAX CORN-TEX • PAX HYSPEED • DICTATOR SPECIAL PURPOSE • BORAPAX • SUPER-X • VELVAPAX LIGHT DUTY • OFFICE-PAX • PAX MECHANICS. Also available are PAX WATERLESS and PAX HECTO INK CLEANSING CREAM • PAX SKIN CLEANSER ECONOMIZER DISPENSERS • and many other fine PAX Products. 50-B

Better Looking!

Better Protection!

GLASS HATS...*

Stronger than Steel

* It's FIBERGLAS

—resin impregnated. It's remarkably tough—so tough we had to devise new tortures in place of conventional tests to measure its full ability to protect heads. This Hard Boiled Hat is as handsome as they come, in *new* colors and *white* . . . or a *glow-in-the-dark finish.*

More Resilient—This crown is drum-like in its resiliency. We had a heck of a time making a dent in it with ordinary test objects. The hammocks, too, are like hydraulic shock absorbers.

Lighter weight—lighter by a full ounce than former hats, which is another way of saying wearing comfort is again improved.

Coolest to wear of any protective hat made. Laboratory tests, simulating sun's rays, prove that this hat is cooler than any you've ever worn . . . important to any outdoor worker on any job. Job efficiency increases with employee comfort. Floating hammock permits air circulation, encourages further cooling. For winter, snug-fitting, quickly interchangeable liners protect on even the rawest day.

Lifetime resiliency—Retains full resiliency indefinitely. Will not deteriorate or become brittle with age.

Impervious to moisture. High dielectric strength. Passes all dielectric tests.

Choice of color—White or grey are standard. Also available are red, green, or practically any color on special order. Color is impregnated — all the way through — will not fade or deteriorate.

Save money!—One size fits all heads, reduces inventories. Fully adjustable headband and hammock—self-shaping for comfort. *6-second* hammock and headband assembly change. Genuine leather headbands optional.

Start saving money today! $4.00 will get you the finest head protection ever built. (Costs less in quantity.) Write

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A GENUINE HARD BOILED HAT MFG. BY E. D. BULLARD CO. S.F. - U.S.A.

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Hard Boiled Hat

FIRST in Head Protection since 1919

COMING EVENTS

In the Field of Safety

Mar. 5-7, Memphis, Tenn.

Southern Safety Conference. Braxton B. Carr, secretary-treasurer, 2120 First Ave., North, Birmingham 3, Ala.

Mar. 6-7, Dallas, Tex.

Texas Safety Association, 11th Annual Meeting. J. O. Musick, managing director, Texas Safety Association, 815 Brown Bldg., Austin, Texas.

Mar. 7-8, Champaign, Ill.

Third Annual Engineering Institute on Industrial Safety. University of Illinois, Division of University Extension, Champaign, Ill.

Mar. 7-8, Philadelphia

Sixteenth Annual Regional Safety Conference and Exhibit. (Bellevue-Stratford Hotel.) Walter W. Matthews, managing director, Philadelphia Safety Council, Chamber of Commerce, 17th and Sansom Streets, Philadelphia 3, Pa.

Mar. 20-21, Boston

Twenty-ninth Annual Safety Conference and Exposition. Edgar F. Copell, president, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Mar. 28-31, New York

Twentieth Annual Safety Convention and Exposition, Greater New York Safety Council. (Hotel Statler). Paul F. Stricker, executive vice-president, Greater New York Safety Council, 60 East 42nd Street, New York 17.

Apr. 5-8, Charleston, W. Va.

West Virginia Annual State-wide Safety Conference. W. C. Easley, managing director, West Virginia Safety and Health Council, 316-17 Masonic Bldg., Charleston, W. Va.

Apr. 11-13, Columbus, Ohio

Twentieth All Ohio Safety Congress and Exhibit. (Neil House). James H. Fluker, chairman; G. S. Kallenbaugh, congress manager, 65 South Front St., Columbus 15, Ohio.

Apr. 12-13, Buffalo, N. Y.

Tenth Annual Western New York Safety Conference. (Hotel Statler). Eugene C. Hohlstein, c/o Buflovak Div., Blaw-Knox Co., 1543 Fillmore Ave., Buffalo, N. Y.

Apr. 18-20, St. Louis, Mo.

Central States Safety Conference. (Hotel Jefferson). Reyburn Hoffman, secretary-manager, The Safety Council

of Greater St. Louis, 511 Locust Street, St. Louis, Mo.

Apr. 23-29, Chicago
American Association of Industrial Physicians and Surgeons, 35th Annual Convention. (Hotel Sherman). Dr. Edward C. Holmblad, 28 East Jackson Blvd., Chicago 4.

Apr. 23-29, Chicago
American Association of Industrial Nurses, Annual Conference. (Hotel Sherman). American Association of Industrial Nurses, Inc., Room 909, 654 Madison Ave., New York 21.

Apr. 24-25, Toronto, Ont.
Annual Convention, International Accident Prevention Associations. (Royal York Hotel). R. B. Morley, general manager, International Accident Prevention Associations, 600 Bay St., Toronto 2, Canada.

May 2-4, Chicago
Twenty-seventh Annual Midwest Safety Show. (Hotel Sherman). Joseph F. Stech, manager, Greater Chicago Safety Council, 10 North Clark Street, Chicago 2.

May 3-5, Charlotte, N. C.
Twentieth Annual North Carolina Statewide Industrial Safety Conference (Hotel Charlotte). H. S. Baucom, safety director, North Carolina Industrial Commission, Raleigh, N. C.

May 4-5, Baltimore, Md.
Maryland Safety and Health Conference and Exhibit. (Lord Baltimore Hotel). Joseph A. Haller, Director of Safety, State Industrial Commission, Equitable Bldg., Baltimore 2, Md.

May 18-19, Duluth, Minn.
Lake Superior Mines Safety Council, 26th Annual Conference. (Hotel Duluth). John A. Johnson, supervising engineer, U. S. Bureau of Mines, 18 Federal Bldg., Duluth 2, Minn.

June 1-3, Roanoke, Va.
Sixteenth Annual Virginia State-wide Safety Conference. (Hotel Roanoke). William M. Myers, managing director, Richmond Safety Council, Allison Bldg., Richmond 19, Va.

June 7-9, Pittsburgh, Pa.
Twenty-fifth Annual Western Pennsylvania Safety Engineering Conference. (William Penn Hotel). Harry H. Brainerd, executive manager, Western Pennsylvania Safety Council, Chamber of Commerce Building, Pittsburgh 19, Pa.

June 18-21, Boise, Idaho
Western Safety Conference. Paul V. Black, president, c/o Idaho Compensation Co., Boise, Idaho.

Oct. 16-20, Chicago
Thirty-eighth National Safety Congress and Exposition. (Stevens Hotel). R. L. Forney, general secretary, National Safety Council, 20 North Wacker Drive, Chicago 6.

OUT OUR WAY

OWOOH! FOR NINE YEARS HE'S BEEN STANDIN' ON SOL-SPEEDI-DRI AN' HE DON'T KNOW WHAT IT'S FOR!
BECAUSE IT'S NONE OF MY BUSINESS! THEY GOT MEN DOIN' THAT!
WHY IS IT SOME PEOPLE HAVE GOTTA BREAK A LEG OR ARM OR SLIMPIN' BEFORE THEY BOTHER TO FIND OUT ABOUT SOL-SPEEDI-DRI?
THE HERMIT
J.R.WILLIAMS

Promote Safety and Production

BY USING

SOL-SPEEDI-DRI

Spread SOL-SPEEDI-DRI on the floor. It soaks up all liquids—oil and grease included. Shop floors are safe for working, safe for walking... and safe working conditions help speed production. SOL-SPEEDI-DRI cuts floor-cleaning costs and helps reduce fire hazards, too. Constant, thorough testing at our own laboratories assures you top quality in every bag. Clip the coupon, send it today... see for yourself what an important job SOL-SPEEDI-DRI can do for you!

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FREE SAMPLE: Fill out the coupon and mail today for big, free sample.

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For Distinguished Service

Recent presentations of the National Safety Council's Award of Honor for Distinguished Service to Safety

Behr-Manning Corp.

Division of Norton Co., Watervliet, N. Y. — Injury frequency rate reduced 59 per cent and severity rate 77 per cent in 1948 as compared with 1947. The 1948 frequency rate was only 32 per cent of the group average and the severity rate 10 per cent of such average. Award was presented November 22, 1949, by John S. Cuthbert, field representative, Eastern Region, NSC.

Carbide & Carbon Chemicals Corp.

Y-12 Plant, Oak Ridge, Tenn.— Injury frequency rate reduced 48 per cent and severity rate reduced 89 per cent in 1948 as compared with 1947. The 1948 frequency rate was only 28 per cent of the group average and the severity rate 17 per cent. Award was presented at Oak Ridge November 30, 1949, by W. G. Johnson, manager, Membership Dept., NSC.

B. F. Goodrich Chemical Co. (A Second Award)

Port Neches, Tex.—For operating 1,309 days (2,820,146 man-hours) without a disabling injury. Award was presented at the Sabine-Neches Foremen's Safety Conference, Beaumont, Tex., January 13, 1950, by James O. Musick, managing director, Texas Safety Association.

Republic Steel Corp.

Central Alloy District, Canton, Ohio — For operating 3,442,031 man-hours without a disabling injury from March 28 to June 5, 1949. Award was presented January 20, 1950, by R. H. Ferguson, member, Board of Directors.

Shell Oil Co., Inc. (A Fourth Award)

Martinez Refinery, Martinez, Calif.—Injury frequency rate for 1948 slightly more than half the group average and severity rate less than one-third such average. Injury frequency rate was reduced 19 per cent as compared with 1947. With 800 employees in attendance, the presentation was made to Dr. R. C. Barton, plant superintendent, by Robert A. Pike, field representative, Western Region, NSC.

Tennessee Eastman Corp.

Kingsport, Tenn. — Injury frequency rate reduced 4 per cent and severity rate 77 per cent in 1948 as compared with 1947. Frequency rate was only 43 per cent of group average and severity rate only 24 per cent of such average. Award was presented December 1, 1949, by George E. Miller, chief, Public Safety Department, United States Atomic Energy Commission, Oak Ridge, Tenn.

Silos Help Solve Dust Problem

Four huge silos loaded by a giant "vacuum cleaner" will shortly eliminate most of the dust and hand shoveling formerly associated with handling clays at the Westinghouse Electric Corporation's porcelain plant at Derry, Pa. Previously handling of these fine, dry powders had created difficult dust conditions because of their low moisture content. Workmen found respirators necessary. Unloading, storing, and utilizing these raw materials was a time-consuming operation involving hand shoveling and conveyor belts.

Four silos are being built, each 68 feet high and 14 feet in diameter. Of concrete-slab construction reinforced with iron bands, the four units will hold nearly 32 carloads of raw materials. Materials stored in the silos can be shaken out easily through trap doors into "weigh" cars and carried to mixing vats.

A big brother to the housewife's vacuum cleaner will load the silos from railroad cars. A 30-inch vacuum tank placed on top of the silos will have enough suction to draw the material up through a six-inch tube and drop it into the silos. Formerly unloading a carload of such material meant 20 hours or more of shoveling. Now the workmen need only guide the suction nozzle through the material. In addition, respirators will no longer be needed.

The Derry plant produces porcelain insulators for use on electrical equipment manufactured by Westinghouse. These insulators range in size from ones no larger than a finger to units taller than a man. A single one of the larger units supports the entire broadcast antenna of radio station KDKA which is 710 feet high and weighs 80 tons.

Four "silos" capped by an outsize vacuum cleaner will shortly be storing and handling clays with less dusty hand shoveling at the Westinghouse porcelain plant at Derry, Pa. The vacuum tank draws powdery flint, feldspar, and kaolin from railroad cars and stores them in the silos.

Country cottage — five rooms and a path.

KREISELMAN
Bellows
RESUSCITATOR

Saves Seconds that Save Lives

Civic Leaders Acclaim Amazingly Compact, Low-Cost Life Saver

While manual first aid resuscitation is often ineffective, and ordinary equipment is too bulky and costly to be kept near every potential danger spot, Kreiselman Bellows Resuscitators can be on hand everywhere for immediate, effective artificial respiration when required. *It is an invaluable supplement to major resuscitation equipment.*

This safe, effective, portable device quickly inflates the lungs with air or oxygen and removes carbon dioxide or toxic gases. Gases from the lungs cannot mix with oxygen in the bellows. Automatic valves and safety devices make errors impossible. It can be used easily and efficiently regardless of the patient's position.

Developed by World-Famous Medical Specialist

Dr. Joseph Kreiselman, noted pioneer in modern, safe resuscitation equipment used in leading hospitals and by the Army and Navy, has developed this outstanding device. It is made by The Ohio Chemical & Surgical Equipment Co., manufacturer of internationally known Heidbrink Medical Apparatus, Ohio Medical Gases and Scanlan-Morris Hospital Equipment.

Use this Emergency Equipment Wherever Breathing Failures Are Likely to Occur

- Police Cars and Ambulances
- Fire Companies
- Boat Houses and Beaches
- Schools, Mines, etc.

Here is an exceptionally effective means of artificial resuscitation — so simple, so portable, and so inexpensive that one can be kept for immediate life-saving action wherever respiratory failure may occur. The Kreiselman Bellows Resuscitator weighs only two pounds, can be stored or carried as easily as a camera, and costs *many times less* than ordinary equipment. *(Anyone can operate it effectively and safely after only a few minutes' instruction!)*

ORDER THIS LOW-COST PROTECTION NOW!
ONLY $55.00 includes bellows and valve assembly, mask, airway, elbow adapter, and carrying case.

Ohio Chemical

OHIO CHEMICAL & SURGICAL EQUIPMENT CO.
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☐ Ship.....(quantity) Kreiselman Bellows Resuscitator at $55.00 each plus parcel post.

☐ Send complete descriptive literature.

Organization.....

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City.....Zone.....State.....

Order signed by.....

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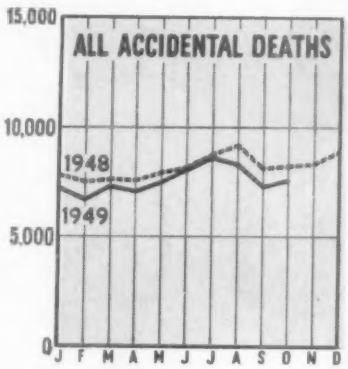
For use only by professional or other adequately trained personnel and not intended to replace manually applied resuscitation.

THE ACCIDENT BAROMETER

Prepared by the Statistical Division, National Safety Council

Accidental deaths in October totalled approximately 7,600, a decrease of 7 per cent from 8,200 in October, 1948. Most of the reduction occurred in deaths from home, public non-motor-vehicle and occupational accidents, but fatalities from motor-vehicle accidents also decreased.

The total for the ten months was 75,800, a reduction of 6 per cent from the 1948 comparable total of 80,800. There was a sizable decrease in deaths from public non-motor-vehicle accidents and moderate reductions in fatal home and occupational accidents. Motor-vehicle deaths showed a slight decrease from 1948.



	1949	*1948*	*Change*
October	7,600	8,200	—7%
Ten Months	75,800	80,800	—6%

Motor-Vehicle Deaths

The October total of motor-vehicle deaths was 3,140, a decrease of 3 per cent from October, 1948. Compared to 1947, it was an increase of 3 per cent.

Deaths for the ten months totalled 25,330, a reduction of 3 per cent from the 1948 total of 25,990. The death rate per 100,000,000 vehicle miles was 7.2, a 9 per cent decrease from the 1948 ten-month rate of 7.9 and 37 per cent below 11.5 for 1941.

Of the 46 states reporting for ten months, 28 had fewer deaths than in 1948, one had the same number, and 17 had more deaths. Cities with populations over 10,000 reported a decrease of 16 per cent for October and 12 per cent for the ten months.

Regional changes from 1948 in the ten-month death totals were:

North Atlantic	— 1%
South Atlantic	+ 3%
North Central	— 3%
South Central	— 7%
Mountain	—11%
Pacific	— 2%

Occupational Accidents

Deaths from occupational accidents numbered approximately 1,300 in October, a decrease of 7 per cent from October, 1948. The ten-month total also decreased 7 per cent—from 13,800 in 1948 to 12,800 in 1949.

The October frequency rate per million man-hours in seven sectional accident prevention contests conducted by the National Safety Council was 7.64, no change from October, 1948. The ten-month rate was 6.99, a reduction of 19 per cent. The October rate for community council inter-plant contests was 8.99, a decrease of 20 per cent from October, 1948. The ten-month rate also decreased—21 per cent to 9.21.

Public Deaths

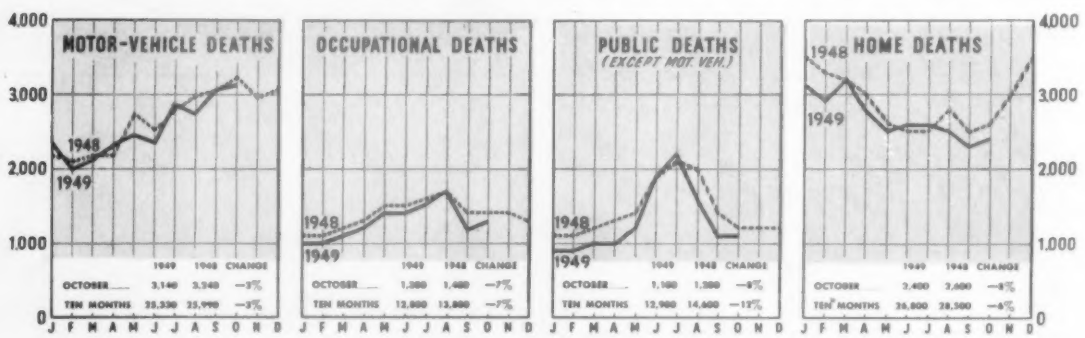
There were approximately 1,100 deaths from public non-motor-vehicle accidents in October, or 8 per cent fewer than in October, 1948. Sizable decreases were reported in fatalities from falls, burns and transportation accidents. Moderate increases were recorded in drownings and firearms accidents.

The ten-month total was 12,900, or 12 per cent below the 1948 total of 14,600. All classes except drownings showed some decrease, with the largest change recorded in falls. Deaths of children 5 to 14 were somewhat more numerous, but all other age groups showed some reduction from 1948.

Home Deaths

October deaths from home accidents numbered approximately 2,400, a decrease of 200 from October, 1948. Decreases were reported in all classes with the exception of a moderate increase in mechanical suffocation.

The January-October total was 26,800, a 6 per cent reduction from the 1948 comparable total of 28,500. The decrease was confined largely to fatal poisonings and burns, but deaths from falls, firearms accidents and mechanical suffocation also decreased.



1950 Safety Drive Launched By Edison Industries

A special industrial safety campaign for 1950, featuring a $100 slogan contest, was announced for Thomas A. Edison, Incorporated, at a dinner on December 12 attended by 175 top Edison executives, department heads and safety committee members from the company's plants in West Orange, Bloomfield, Newark and Kearney, N. J.

In detailing the program, Sumner F. Larchar, vice-president in charge of industrial relations, said the goal of the campaign was to make 1950 an accident-free year.

A$25 U. S. Savings Bond will be awarded to the employee who submits the best safety slogan for each of the four quarters of next year. Slogans will be judged on the basis of originality, brevity and applicability, and each of the winning slogans will be displayed on special safety bulletin boards.

The committee of judges will be made up of one representative from each of seven employee organizations—Edison Old Timers' Club, Alva Club, Local 407 of the U.E.W.A., Primary Battery Employees' Association, First Aid Club, Edison Industries Athletic Association, and Edison Industries Mutual Association.

A large bulletin board is to be placed in each company division listing the departments in that division and number of accumulated disabling injuries to date. Likewise, in each department a bulletin board will be installed showing the number of days worked without injury and also the last previous record.

A special bulletin board will be installed in the Edison Industries Executive Operating Committee room listing all divisions and their standing.

Charles Edison, company president, traced the course of the development of industrial safety techniques within the Edison Industries and urged the complete cooperation of all employees in the drive to cut on-the-job accidents to an irreducible minimum.

A week before Christmas a special letter from Mr. Edison was mailed to all employees.

NOW! AN IMPORTANT and EXCLUSIVE NEW IMPROVEMENT IN FIRE EXTINGUISHERS

BUFFALO better-built

VL FIRE EXTINGUISHERS with-

DRYEX THE AMAZING NEW DRYING AGENT!

Long proved for its speed and effectiveness in fighting fires of electric origin, also against fires in oils, gasoline, paint, greases and other flammable liquids, the Buffalo *better-built* VL Fire Extinguisher is now more dependable than ever! Each VL Extinguisher now contains DRYEX, the exclusive new drying agent that removes all traces of moisture, prevents corrosion and rust, insures continuous accuracy of performance and adds many years to the dependable life of the extinguisher.

1-qt. VL Fire Extinguisher containing DRYEX

Also available in 1½-qt., 1-gal. and 2-gal. sizes

WRITE US for full information on **DRYEX** and name of your nearest Buffalo distributor.

BUFFALO FIRE APPLIANCE CORPORATION
DAYTON 1, OHIO

Established 1895

Personals

John S. Shaw Retires

JOHN S. SHAW, formerly president of the American Society of Safety Engineers and general chairman of the Chemical Section, NSC, retired January 1 as safety director for Hercules Powder Company, Wilmington, Del.

A veteran in the explosives and

chemical industries, Mr. Shaw is nationally known as a pioneer in industrial safety. For nearly half a century he devoted his efforts to standardizing chemical procedures and use of safety equipment.

From 1906 to 1913 he was engaged in the production of explosives and acids for DuPont Company plants in New Jersey, Michigan, Wisconsin and California.

Following the dissolution of the old DuPont Company, he was transferred to Hercules in 1913 as superintendent of acid and high explosives production in Hercules, Calif. He was named superintendent of the Hercules plant at Parlin, N. J., in 1917. In World War I he aided in the planning and direction of a government explosives plant at Nitro, W. Va. He became a member of the company's industrial research department, with offices in Philadelphia, in 1919.

His interests were in improving operating methods to increase yields and cut down accident hazards, and he was assigned to this work as assistant to the general manager of the company. In 1925 he was named manager of the safety and service department and in 1941, director of safety.

When the American Society of Safety Engineers became an independent society in 1947, he was elected president, holding office during 1947-48. At the annual meeting in Chicago in 1948 the ASSE presented a plaque to Mr. Shaw "in recognition and appreciation of his outstanding leadership as president during the year 1947-48."

He was a member of the Safety and Security Division of the U. S. Ordnance Department, serving as consultant to the chief of the division. At the close of World War II, he was presented a certificate of appreciation by the War Department.

Mr.Shaw is a former director of both the National and the Delaware Safety Councils and a member of the Safety Engineers Club of Delaware. He is a member and past president of the Hercules Quarter Century Club, a member of the Hercules Country Club, the Trowel Club, F. & A.M. Lodge, Hiram 25, and Westminster Presbyterian Church. He lives in Carrcroft, Del.

Executive Changes at Hudson Coal Co.

CADWALLADER EVANS, JR., a former general chairman of the Coal Mining Section and director of the National Safety Council, resigned as president of The Hudson Coal Company, Scranton, Pa. He has opened an office in Scranton as a consulting engineer and will continue to serve the company as a director and consultant.

Mr. Evans became general manager of the company in 1925, vice-president and general manager in 1937, and president in 1946. He is widely known in mining circles for development of mining methods and for his interest in safety.

G. B. FILLMORE, senior vice-president, succeeds Mr. Evans as president.

EDGAR C. WEICHEL, general manager, has been elected vice-president. He is well known in the anthracite industry, having served for many years with the Pennsylvania Coal Company and The Hudson Coal Company. He was general chairman of the Coal Mining Section, NSC, 1945-46.

ASKED and ANSWERED

Assistance with problems of accident prevention and industrial health is offered by National Safety Council. All inquiries are answered by mail and a few topics are selected for publication.

Lubricating Acid Valves

Question: Is it true that some types of lubricants will form an explosive mixture with nitric acid? What type can be used safely in valves and pumps of nitric acid service? How can nitrated compounds be removed safely from packing glands and Chiksan joints?

Answer: Nitric acid will form explosive compounds in some instances with greases which contain glycerin or glycerin esters.

The standard recommendation for pump packing has always been a non-glycerin grease, heavily loaded with graphite, impregnated into a blue acid type asbestos fiber packing. The Chiksan joints can be lubricated with the same type of grease. The grease should have a melting point 50° to 100° F. above the operating temperature of the solution circulating through the equipment.

The silicone plug valve lubricant is quite resistant to nitric acid and satisfactory for pump

packing. We have no reports on its use in swing joints.

In explosives plants, it is customary to remove grease compounds by flushing with hot water, finishing with super-heated water under steam pressure. Complete decontamination is obtained by heating the equipment to a dull red.

In your case, it probably would be best to disassemble the packing glands behind a portable screen of steel or bullet-proof glass, washing out the gland and packing with hot water from a hose.

Accidents and injuries from melting and washing out such compounds from equipment are rare. Accidental explosions usually are the result of striking or scraping the material or of cutting into the equipment with a torch.

Whatever lubricant is used, if minor dilution of the acid is not objectionable, it is always a good idea to introduce a little water into the pump shaft packing gland between the packing and the solution being pumped.

Recreation Conference to Be Held at Purdue

The fifth annual Industrial Recreation Conference will be held at Purdue University, February 16 to 18. The Conference is sponsored by the University's Division of Education and Applied Psychology and the Technical Extension Division.

For the most part, sessions will be conducted on a round table discussion period basis under experienced leaders. Subjects include: "Music in the Employee Recreation Program," "Recent Research Findings in Industrial Recreation," "Financing the Employee Recreation Program," "Organizing a City Industrial Recreation Council," "Elements of a Balanced Program," "Self-Improvement Suggestions for the Employee Recreation Director," and "Industrial Recreation Problems Clinic."

Information may be obtained by writing to Industrial Recreation Conference, Technical Extension Division, Purdue University, Lafayette, Ind.

Industrial Health

Highlights in Industrial Medicine, Hygiene and Nursing
Compiled by F. A. Van Atta, Industrial Department, NSC

Dusting Compounds

A Study of Workers Exposed to Talc and Other Dusting Compounds in the Rubber Industry. By Warren L. Hogue, Jr. and Frederick S. Mallette. The Journal of Industrial Hygiene and Toxicology 31: 359-364 (November, 1949).

A large variety of materials have been used to keep unvulcanized rubber from sticking together when stacked or rolled. Among these materials are talc, pyrophyllite, mica, clay, walnut shell dust, corn starch, whiting, etc. Some of these operations are quite dusty although exhaust systems and hoods have generally been installed in recent years and conditions were much dustier a few years ago.

In the two plants where this study was made the measured dust concentrations, averaged for the period 1943 to 1948, varied from 15,000,000 particles per cubic foot in the area where the tube curing men worked to 50,000,000 particles per cubic foot where liners were being rerolled in the operations where talc was used as the dusting powder.

Where whiting, pyrophyllite and talc were used alternately or in combination the exposures varied from 50,000,000 particles per cubic foot at refiners to 150,000,000 particles per cubic foot around a shipping laborer.

Two groups of workers were included in the study. One group of tubing workers had been exposed only to talc and the period ranged from ten years to 36 years. The second group had major exposure to whiting and some exposure to pyrophyllite and talc. The exposure periods in this group ranged from ten years to 25 years. All of the men examined were working at the time of the study and were in apparent good health. They were the men with the longest and heaviest exposures in their respective parts of the plant. Several of them had had previous work as miners or foundrymen.

The physical examinations given these men included blood counts, urinalysis, blood pressure reading, vital capacity determination and x-rays of the lungs on 14" x 17" films. Of the group exposed only to talc none showed any x-ray evidence of pneumoconiosis. One showed a reduced vital capacity. Of the group exposed to whiting, pyrophyllite and talc one man showed a pneumoconiosis which was defined as third stage and six had vital capacities which were considered as subnormal. The one man with third stage pneumoconiosis had had five years experience in coal mining.

It is pointed out that previous publications reporting talc as the cause of disabling pneumoconiosis do not present exposures restricted to talc. The dust involved in each case has contained tremolite, of a fibrous structure, or quartz.

Ethylene Chlorhydrin

Fatality and Illness Caused by Ethylene Chlorhydrin in an Agricultural Occupation. By Albert F. Bush, Herbert K. Abrams and Harold V. Brown. The Journal of Industrial Hygiene and Toxicology, 31:352-358 (November, 1949).

Ethylene chlorhydrin has been used for some time to reduce the period of dormancy of seed potatoes which must be planted shortly after digging. Approximately 1500 gallons were used in California in 1948 for this purpose.

The individuals in this case were probably exposed to 300 to 500 p.p.m. by inhalation plus some skin contact since they handled empty burlap bags which had been wrung out of the chemical. The man involved had become ill at about 11:30 in the morning but returned to work about 1:00 p.m. worked until he collapsed at about 3:00. He died at 7:30 p.m. and an autopsy was obtained.

A method of spraying the chemical into the treatment room has been devised with mechanical circulation to keep the vapor and mist evenly distributed throughout the chamber. The vapor is then purged out of the room by mechanical ventilation when sufficient treatment has been given. A field investigation indicated that about 500 complete air changes in the room were required to lower the vapor concentration to a completely safe level for men to enter and work. The ventilation should be kept operating all the time that work is going on.

The five survivors apparently had no residual effects from the poisoning.

Vision Program

Complete Industrial Vision Program For Small Industries, by Robert J. O'Shea. Trained Nurse and Hospital Review. 123:229-231 (November, 1949).

The Maryland Society for Prevention of Blindness has developed a special industrial vision program for plants with less than 400 workers. The program has been in operation for almost a year and is considered to be very successful.

There is a fairly nominal charge for the service to the industries making use of it but the major financial support comes from the Community Chest of Baltimore. The program has also been supported by the Baltimore Gas & Electric Company, the Safety Engineering Club of Baltimore and the Baltimore Safety Council. Each of these organizations has provided technical personnel to make lighting surveys of the plants which were using the service.

The service provides a standard industrial vision testing service

using the Bausch and Lomb Orthorator as the surveying instrument.

Following the survey the cards are tabulated and checked by the Occupational Research Center of Purdue University. The employees whose vision does not measure up to the minimum standards for the particular job, as suggested by the Occupational Research Center are advised to have a complete examination by an ophthalmologist.

When the employee is referred to an ophthalmologist he is given a referral card which is to be filled out by the physician and returned to the Occupational Research Center. This acts as a follow-up on employees to show which individuals have obtained professional eye examination and also acts as a guide to the physician as to the patient's specific visual job requirements.

In addition to the program of testing of visual skills and lighting surveys the Society provides a continuous stream of educational materials for distribution to the employees of plants using the service.

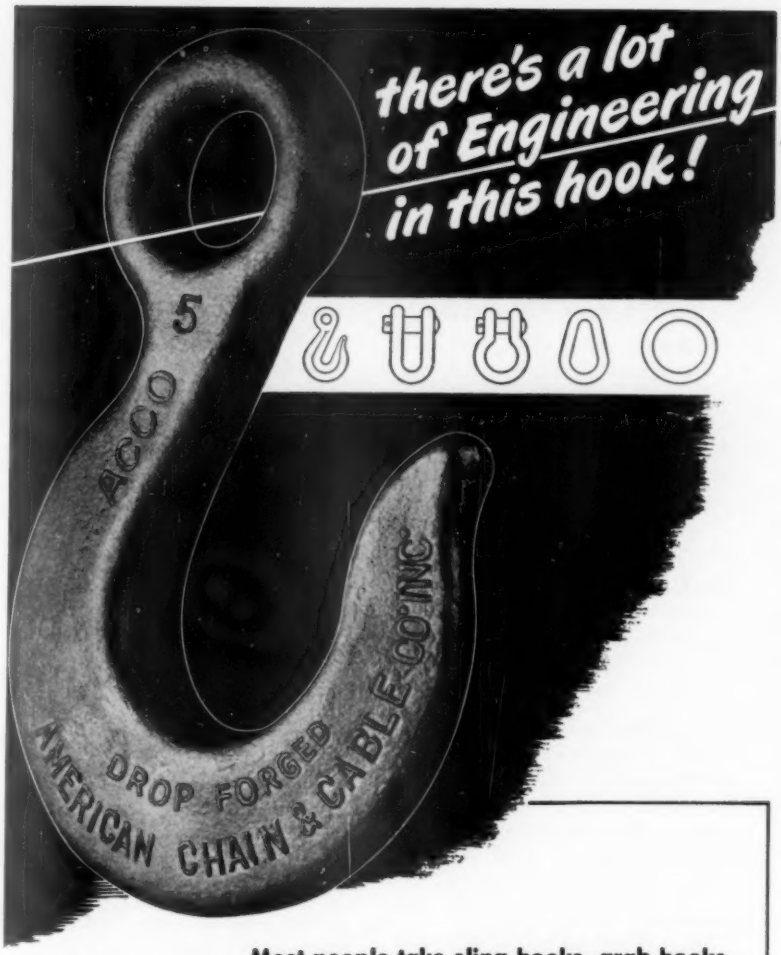
A very careful preliminary program is carried out before the testing program is attempted in any plant in order to enlist the full and active support and cooperation of both the supervisory personnel and the employees in general. The reaction of the employees has been very favorable to the program in all plants in which it has been installed. The experience has been that between 40 and 50 per cent of all the individuals tested have had visual performance below their job requirements.

The Common Cold

The Prophylaxis and Treatment of the Common Cold with Neohetramine (Thonzylamine Hydrochloride). By Joseph J. Arminio, M.D. and Charles C. Sweet, M.D., Industrial Medicine and Surgery 18:509-511 (September, 1949).

For this study of the prophylaxis and treatment of the common cold with an antihistaminic drug the patients were taken from a state penitentiary, a convent and a seminary. Neohetramine was selected as the least toxic of the

—*To page 64*



Most people take sling hooks, grab hooks, shackles—chain fittings of one kind or another—pretty much for granted . . .

Here at American Chain we take them seriously. Their design and manufacture call for a high type of engineering, plus years of experience.

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BOOKS AND PAMPHLETS

Chemicals

Precautionary Fire and Explosion Safeguards in the Use of Chlorine Dioxide for Industrial Bleaching. Published by National Board of Fire Underwriters, 85 John St., New York 7, N. Y. 1949. 23 p. Free (NBFU Research Report No. 7).

Conferences

State Safety Conferences. A Guide. Published by U. S. Bureau of Labor Statistics, Washington 25, D. C. 1949. 9 p. Free.

Fire Protection

The Prevention of Dust Explosions National Fire Codes Vol. II. Published by National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. 1949. 231 p. Price $3.00.

Gases

Safe Handling of Compressed Gases. Published by Compressed Gas Association, 11 West 42nd St., New York 18, N. Y. 1949. 15 p. Price 25¢. (Pamphlet P-1)

Mines

Observations of Safety Practices and Conditions in Japanese Coal Mines. Published by U. S. Bureau of Mines. 1949. 37 p. Available from The Bureau Publications Distribution Section, 4800 Forbes St., Pittsburgh 13, Pa. Free (IC. 7542)

Textile Industry

Injuries and Accident Causes in Textile Dyeing and Finishing. Published by U. S. Bureau of Labor Statistics. 1949. 65 p. For sale by the Superintendent of Documents, Washington 25, D. C. Price 45¢. (Bulletin No. 962)

MAGAZINE ARTICLES

Accident Proneness

Accident Proneness: A Critique. By E. Richard Weinerman. (In American Journal of Public Health. Dec. 1949. p. 1527)

Clay Products

Safety Today in the Ceramic Industry. By Lester M. Merritt. (In Ohio Industrial Commission Monitor. Nov. 1949. p. 163)

Eyes

Cutlery Plant Profits from Visual Efficiency Program. By Arthur J. K. Delage, Jr. (In Modern Machine Shop. Dec. 1949. p. 92)

Floors

Low-Cost Conductive Flooring for Hospitals. By Noyce U. Griffin. (In Electrical Engineering. Dec. 1949. p. 1085)

Food Industry

Packer Develops Knife Safety Devices. By W. F. Massy. (In National Provisioner. Dec. 17, 1949. p. 18)

Health

Disability Evaluation in Industrial Pulmonary Disease. By Dr. George W. Wright. (In Journal of the American Medical Association. Dec. 24, 1949. p. 1218)

Power Presses

Guarding Problems as Injury Cause. By L. A. Faulkner. (In Machine and Tool Blue Book. Dec. 1949, p. 115)

Rope

Better Rope Testing. (In Coal Age. Dec. 1949. p. 94)

Trucks

Incentives Reduce Truck Accidents. By K. R. Crocker. (In Mining Engineer. Dec. 1949. p. 39)

Win Award in Brazil Exposition

Shown in the accompanying illustrations are the exhibits of posters displayed by the National Safety Council at Rio de Janeiro last August and the certificate awarded them. The Council's posters ranked third in the humorous class.

The occasion was the Second Accident Prevention and Industrial Health Week sponsored by the Brazilian Association of Industrial Medicine in cooperation with government agencies. In addition to the displays of domestic and foreign posters there was a comprehensive exhibit of safety equipment.

Trophy to Honor Veteran Engineer

WILLIAM N. PATTEN of Salem, Mass., was honored on December 5 at a dinner at the Algonquin Club given by his old associates in Stone & Webster Engineering Corp., the occasion following by one day the 50th anniversary of his joining Stone & Webster.

J. R. Lotz, chairman of the board, presented on behalf of the General Safety Committee the William N. Patten Trophy, a specially designed bronze plaque, which will perpetuate Mr. Patten's name in the Stone & Webster organization, in recognition of his leadership in accident prevention work and his important contributions to its construction activities.

The trophy will be kept permanently at the Stone & Webster offices, annual awards being made and inscribed on it for the Stone & Webster construction project having an outstanding safety record for the year.

Mr. Patten joined Stone & Webster shortly after graduating from the University of Maine with the class of 1891 and has served successively as draftsman, chief draftsman, engineer, and construction manager. In 1928, he was elected vice-president and director of the corporation.

In 1941, Mr. Patten was given the honorary degree of Doctor of Engineering by the University of Maine. He resigned as a vice president of Stone & Webster Engineering Corporation January 1, 1948, but has continued as a director.

New Film Contest

Entry blanks have been mailed to prospective contestants in the annual contest for the best film on accident prevention produced or released in 1949. Awards are given winning films in various classifications.

The contest is conducted each year by The National Committee on Films for Safety, sponsored by 21 organizations interested in all fields of safety. For further information contact William Englander, secretary, National Committee on Films for Safety, Room 960, 20 North Wacker Drive, Chicago 6.

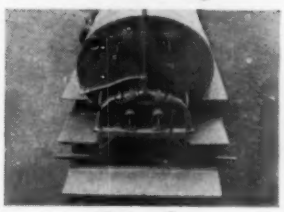
"They're lined up for miles since I started shoeing them with slip-resistant 4-WAY Safety Plate."

For greater safety under foot, in your plant and on your products

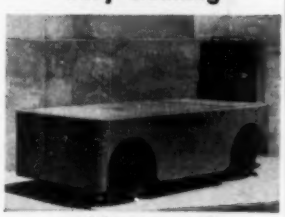
Inland 4-Way® Safety Plate

Safe Footing

Easy Cleaning



Firesafe



Adds Strength

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INLAND STEEL COMPANY, Dept., NSN20
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas — Just Out! Bulletin Fl. Complete engineering and application data. Send for it!

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Green Cross News . .

Activities of Local Safety Councils and Chapters

Progress

The beginning of the year is inventory time when we like to check back over past efforts and accomplishments and make plans for the future.

As the new year gets off to a good start reports from several Safety Council cities record definite progress and emphasize once again that well-planned community safety programs, intelligently applied on a year-round basis, pay rich dividends in lives saved and injuries prevented.

Of course, the local councils and chapters do not assume the credit for all safety achievements in their cities but the fact remains that worthwhile reductions in accidents usually follow when once a Safety Council, properly organized and administered, gets its program under way.

Here are just a few thumb-nail reports that have come to us recently. We would like to receive others.

Cleveland — Cleveland statistics tell a story of real accomplishment. First official accident statistics for all fields were compiled in the early twenties. The 20-year records of the Greater Cleveland Safety Council from 1929 through 1948 show a steady decline. There were 814 accidental deaths of all types in 1929 (including 125 in the Clinic disaster). In 1948 there was a total of 262 fatalities. While there were 255 traffic deaths in 1929, there were 96 in 1948 in the face of a great increase in mileage and registrations. During the past eight years home deaths have also shown a fine reduction in Cleveland. Much of the credit must go to the Home safety division of the council which activated and intensified its programs around 1940. In 1941 there were 174 home fatalities in Cleveland; in 1948 there were 88—just about cut in half.

Omaha — During the 15 years since the Omaha Safety Council was organized year-to-year statistics show that a total of 548 lives have been saved as follows: Home, 120; industrial, 135; traffic, 188; public, 105.

Hamilton, Ohio—The industrial program has resulted in a steady decline in the frequency rates. In November 1942 when the Hamilton Safety Council was organized, the frequency rate (number of disabling occupational injuries per million man-hour exposure) was 26.77. On December 31, 1948, the accident frequency in the Hamilton area was 14.22. A late report shows that further reductions were made during the first 10 months of 1949. The Hamilton Council organized a Bicycle Court early in 1948. From June 1, 1947, to May 31, 1948 there were 19 collisions of autos with bicycles which resulted in 16 injuries and one fatality. From June 1, 1948 through May 31, 1949, bicycle casualties had been reduced to 9 accidents, resulting in 10 injuries and no fatalities—a 75 per cent improvement.

Chicago—Several years ago the Greater Chicago Safety Council started a series of supervisory dinners for plant safety people in the more important industrial districts of Chicago. The council also arranged a series of regional safety inspections made by groups of leading safety engineers of plants in the several areas. An industrial safety contest was started about the same time. A recent report from the Chicago Council indicates that the industrial regions of the area now enjoy the lowest frequency rate of any similar areas in the country. This intensive industrial program reaches 300,000 employees of 150 member companies.

New York—The Greater New York Safety Council reports that in New York City for the 10-year period 1930-39, the average death rate for accidents of all kinds was 59.9 (deaths per 100,000 population). The 1948 rate was 46.8, representing the lowest rate since accident statistics were first recorded in New York City.

San Francisco—The San Francisco Chapter of the National Safety Council was organized in 1944. In 1945 there were 147 motor vehicle deaths; in 1948 there were 88 traffic fatalities and for the first 10 months of 1949 there were 45 deaths a reduction amounting to 38 per cent com-

The Conference Plan

The new plan developed by the Conference of Local Safety Organizations went into effect, by Conference action, on January 1, 1950.

From the signed agreements received from chartered councils and chapters an early tabulation shows that approximately 90 per cent of all Class A chartered councils and chapters met the deadline with signed agreements.

In addition, several Class B agreements have been received and quite a number of applications have come in for chapter status from non-chartered councils.

This is a quick tabulation as of January 1. A full and complete report was issued to members of the Conference late in January.

pared with the same period of 1948.

Kansas City—Traffic fatalities among children of elementary school age, from 5 to 14, have been reduced from 52 in the decade from 1930-39 inclusive to 32 in the decade 1940-49 and only 3 children in the elementary school age have been killed in traffic in Kansas City during the past 10 years going to or coming from school. Also traffic deaths generally have shown a fine reduction. There were 71 traffic fatalities in 1946; 46 in 1947; 42 in 1948. Up to December 1 of 1949 there were 20 motor vehicle deaths in Kansas City. In accidental deaths of all classifications there were 270 fatalities in 1946 compared with 197 in 1949, up to December 1. Kansas City Safety Council officers and Manager George Burns are proud of the fact that for the first ten months of 1949 Kansas City led all other cities in traffic death reductions in cities with a population of 200,00 or more, with a decrease of 47 per cent.

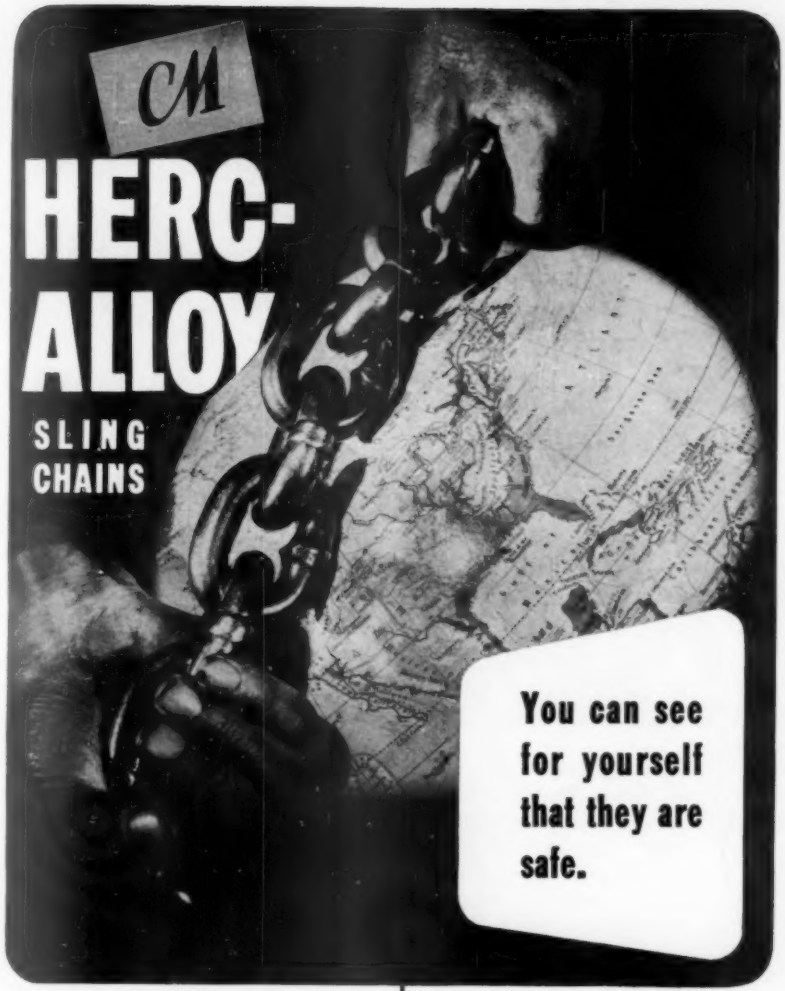
Small Plants Heavy Losers Through Accidents

The big loser in industrial accidents is the small firm, states an article in the December issue of the *California Safety News*, which points out that from 70 to 80 per cent of the cost of occupational accidents in California are paid by the owners of small firms.

Of the California total of over $230,000,000 a year in accident costs, the small plant owner pays more than $173,000,000.

The fact that the small plant owner suffers heavily from the lack of a well-organized safety program is illustrated by figures given in the *California Safety News*. While plants with over 500 workers had an accident frequency rate of 10.13—a little over 10 disabling injuries for each million man-hours of work—plants with 100 workers or less had a frequency of 21.94, or more than double.

"It is clear that the smaller the plant, the higher the accident rates," says the article, which outlines a program by which small plants can reduce occupational accidents to a minimum.



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HERC-ALLOY . . . the chain you can *SEE* is safe

COLUMBUS-McKINNON
CHAIN CORPORATION
(Affiliated with Chisholm-Moore Hoist Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland • San Francisco • Los Angeles

Shipyard Safety Men Meet

With a National Safety Council Jumbo Safety Poster as a background these safety men attending the 40th meeting of the Atlantic Coast Shipyards Safety Exchange posed for a picture at the plant of the Sun Shipbuilding & Dry Dock Company, Chester, Pa. Note the hard hats—always conspicuous in shipyard scenery.

In the back row, left to right, are: S. D. Cochran, Sun Ship; James Nolan, Bethlehem; H. J. Nordstrom, Newport News; L. R. Sanford, Shipbuilders Council; Carter Kendall, Bethlehem; W. F. Eagan, East Boston; James Turnbull, New York Ship, and H. L. Adams, Bath Iron Works.

Front row: Howard Willis and A. B. Cressy, Sun Ship; B. Lee Rogers and R. D. Dauterich, Maryland Dry Dock; R. A. Fleck, Hoboken; Ben Fish, New York Ship; George Turner, Sparrows Point; Don Sidle and E. E. White, Sun Ship.

ASA Directors

The American Standards Association announces election of three new members of its board of directors effective January 1, 1950, for a term of three years. Maurice Stanley, chairman of the board of the Fafnir Bearing Company, represents the Anti-Friction Bearing Manufacturers Association, Inc; B. S. Voorhees, vice-president, New York Central System, represents the Association of American Railroads; and Colonel J. G. Vincent, vice-president, Packard Motor Car Company, represents the Automobile Manufacturers Association.

In addition, E. E. Potter, vice-president, General Electric Company, has been named by the National Electrical Manufacturers Association to fill out the unexpired term of Clarence L. Collens, who has just retired as chairman of the Reliance Electric and Engineering Company. Miss Ardenia Chapman, dean of the College of Home Economics, Drexel Institute of Technology, Philadelphia, is completing the unexpired term of Mrs. Carol Willis Moffett, well known for her work with the American Home Economics Association, as member-at-large.

Continuing on the board for another three-year term are J. H. McElhinney, vice-president, Wheeling Steel Corporation, representing the American Iron and Steel Institute, and Auguste G. Pratt, chairman of the board, Babcock & Wilcox Company, representing the American Society of Mechanical Engineers. R. Oakley Kennedy, formerly vice-president of Cluett, Peabody and Company, Inc., has been re-elected member-at-large for the next three years.

Tests Show Body's Crash Resistance

Air Force volunteers, riding in a rocket-propelled sled developed for the Air Force by Northrop Aircraft, Inc., are now duplicating airplane crashes in an effort to provide greater flying safety. The experiments are being conducted at Edwards Air Force Base, Muroc, Calif.

The tests already have given aeromedical science heretofore unobtainable information on just how much of the terrific decelerative force encountered in a crash the human body can safety withstand.

In the Air Force experiments, volunteers ride the "human decelerator" sled which is guided by railway tracks and propelled by solid fuel rockets into a series of mechanical brakes. The brakes decelerate the sled with a force equivalent to that experienced in actual crash landings.

The experiments have shown that, with proper support, the human body has an amazing toughness.

The six USAF volunteers, one officer and five enlisted men, have already completed a series of decelerative tests in gradual increases up to 35 "G's," (35 times the force of gravity) while facing both forward and backward on the sled. If unprotected by a seat harness or the back of the seat

during the tests, the volunteer would be violently hurled against the sled's structure.

A deceleration of 35 "G's" is accomplished by slowing the carriage and rider from a speed of 150 mph to 75 mph in 1/5 of a second. It creates the same sensation an automobile driver would experience if he stopped his car traveling at 75 miles per hour in an interval of nine feet.

The decelerator tests showed that when seated in a backward-facing position, with the back of the seat providing support, the human body could easily withstand a force of 35 "G's". In tests with forward-facing seats, it was necessary to provide the volunteers with a special seat harness consisting of web straps fastened across the lap, around each thigh, and over each shoulder to enable them to withstand the high "G" forces.

The President's Medal

Awards made by the National Safety Council for resuscitation by the Prone Pressure Method

JAMES A. HARBERT, welder, The Texas Company, Davenport, Okla. —asphyxiation.

BARBARA TAYLOR, 17-year-old student, West Springfield, Mass.—drowning.

J. A. LUKE, oil well pumper, The Texas Company, Muenster, Tex.—suffocation.

EDISON L. KILGORE, forester, U. S. Forest Service, Chula, Ark. —asphyxiation.

DURWARD ALLEN PARSONS, meterman, Texas Power & Light Co., Waco, Tex.—asphyxiation.

ORVILLE CAIN, farmer, Wapella, Ill.—electric shock.

ROY C. STANLEY, groundman-driver, Illinois Power Co., Decatur, Ill.—electric shock.

LINK YOUNG, serviceman, Surge Dairy Equipment Co., Newark, Ohio—drowning.

5249 Tool Belt with Sliding Trace

5233 "Klein-Kord" Safety Strap

1945 ADJ Adjustable "Polemaster" Climbers

1628-BH Klein Hot Line "Chicago" Grip

202

201 NE

301

Klein Pliers

The remarkable record of safety made by utility companies over the years is due in no small measure to the equipment used by the men on the job.

For nearly a century the name Klein has stood for the finest in pliers and climbers, safety straps and belts, grips and wrenches.

Men whose lives depend on the equipment they use realize there can be no substitute for quality. The name Klein is generally accepted as standing for the finest in linemen's and electricians' tools and equipment.

Foreign Distributor:
International Standard Electric Corp.
New York

The Klein Pocket Tool Guide, showing the Klein line and containing useful information, will be mailed on request.

Mathias KLEIN & Sons
Established 1857 **Chicago, Ill., U.S.A.**
3200 BELMONT AVENUE CHICAGO 18 ILLINOIS

Sure, comfortable
footing on
U·S·S
MULTIGRIP
FLOOR PLATE
● Wet or dry, U·S·S Multigrip Floor Plate offers skid resistance and traction in every direction . . . cuts down on accidents due to slips and falls. Multigrip's flat-topped risers are comfortable underfoot . . . tend to lessen fatigue.
Multigrip won't chip, crack, splinter . . . won't absorb grease or oil. It adds to the structural strength of the floor. And Multigrip is permanent.
Get further information about Multigrip from your nearest steel warehouse or write to us direct.
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH AND CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK
USS
MULTIGRIP FLOOR PLATE
UNITED STATES STEEL

Industrial Health

(From page 57)

antihistaminic drugs available.

The individuals who were to receive the antihistaminic were divided into three groups of 100 each, one group receiving 50 mg. three times a day, the second 50 mg. twice a day and the third 50 mg. once a day. Another 300 individuals received placebos indistinguishable in appearance. The subjects were all subjected to the same environment, to the extent that they shared the same rooms in the dormitories.

Eleven of the patients receiving 150 mg. per day complained of dryness of the throat and sneezing or of mild nausea. This was relieved by decreasing the dosage to 100 mg. daily. The remaining 200 individuals receiving 50 or 100 mg. daily showed no toxic symptoms at any time.

Of the 200 individuals receiving 100 and 150 mg. per day for 180 days, 182 were without any symptoms of a cold and only five showed any cold symptoms that lasted beyond 48 hours. None of those receiving the antihistaminics developed any involvement of the sinuses, headache, cough or elevation of temperature.

Of the 300 persons receiving the placebos 241 contracted one or more colds and of these 179 went through all of the phases of the complete cold. Eleven developed complications such as sinusitis, bronchitis or pneumonitis.

In the treatment of established colds it was observed that the administration of the Neohetramine during the first 24 hours relieved the cold in one-fifth the time required for those receiving the placebo and during the second 24 hours the time required for complete relief was one-half that of those receiving the placebo. If the cold had gone beyond the 48 hours the time required for relief was the same with placebos as with the Neohetramine.

POSITION DESIRED

Safety and/or Personnel, 9 years experience heading both organizations, excellent records and recommendations. Desire position with future in either or both fields. Address Box 404, NATIONAL SAFETY NEWS.

1949 Transactions

EACH year the wealth of information and ideas presented at the National Safety Congress, the biggest annual event in safety, is recorded in the volumes of Transactions. For years, safety directors have found the Transactions of the Congress a valuable source for new methods, ideas, and devices which they can put to work in their own accident prevention programs.

The talks and panel discussions, given by leading safety authorities, are published in separate volumes for the various sections and divisions of the Council to permit wide distribution of pertinent volumes to foremen, safety-committeemen, branch plant managers, and nurses at small cost.

Expected to be in stock this month are the volumes covering the home safety and Public Employee Safety Committee meetings, and the sessions of the following industrial sections: Automotive and Machine Shop; Cement and Quarry; Coal Mining; Electrical Equipment; Glass and Ceramics; Meat Packing, Tanning, and Leather Products; Mining; Printing and Publishing; and Public Utilities.

The complete set will consist of 33 volumes. Prices of individual volumes may be obtained from the Membership Department of the Council.

Employee Publications Service

Prepared for the use of editors of employee publications, the free publicity services described below are available from the National Safety Council's Department of Public Information.

Regular mailing list services include the *Safety News* Clipsheet, issued quarterly; the monthly Employee Publication News Letter; and *The Lighter Side*, monthly one-column mat and proof on industrial safety.

The following cartoon series are available in mats and in good quality proofs for offset publications, but *not* in stencil inserts for mimeographed publications.

Hap Hazard (10 one-column cartoons on industrial safety)

Liberty Belles (12 one-column cartoons on industrial safety for women)

What's Wrong With This Picture? (12 two-column cartoons on work safety)

Stay Safe Off-the-Job Too! (25 one-column cartoons on off-the-job safety, with accompanying text material)

Unsafe at Home (20 one-column cartoons on home safety)

Fender Benders (12 one-column cartoons on traffic safety)

Bumper Crop (10 one-column cartoons on traffic safety)

Take It Easy (6 one-column cartoons on traffic safety)

Dead Wrong (10 two-column editorial cartoons on traffic safety)

Freezin' Reason (6 one-column cartoons on safe winter driving)

Cold No's (6 one-column cartoons on safe winter driving)

You Be the Judge! (6 one-column cartoons on safe winter driving)

Car Tunes (6 one-column cartoons on safe winter driving)

Safe Bets (10 one-column cartoons on general safety)

A photo lending library on industrial, home, traffic, and child safety, and an information service which handles specific inquiries are also available to editors.

Cover page of Safetygraph No. 15, prepared for use in indoctrination of new employees. Subjects covered include the role of luck in accident prevention, the need for training, the safety rule book, horseplay, safe clothing and personal protective equipment, housekeeping, cooperation, and the importance of first aid for all injuries.

"Cloth Shears"

A new publication for the textile industry, Data Sheet D-T. 9, "Cloth Shears," is now in stock. This data sheet discusses the operation of cloth shears, hazards in their use, machine guards, electrical equipment, lighting, housekeeping, and fire prevention, and lists rules for operators to observe.

This four-page, illustrated data sheet is not scheduled for publication in the NATIONAL SAFETY NEWS.

Member prices: 1 to 9 copies, 15 cents each; 10 to 99, 11 cents each; 100 to 999, 7 cents each; 1000 or more, 6 cents each.

Construction Job Manual

Designed as a handy reference and record volume for job superintendents, the *Construction Job Manual* combines plans for both safety and efficiency.

The manual includes 10 safe practices pamphlets on construction subjects, 25 construction detail sheets (working drawings for made-on-the-job safety devices, to be used by foremen and workmen), 7 data sheets (each of which is a detailed discussion of one operation, machine or process), 15 miscellaneous job forms, 24 pages of text, and 8 pages of plans. The manual is furnished in a leather binder.

Member prices: 1 to 9, $11.50 each; 10 to 99, $11.00 each; 100 to 999, $10.50 each; 1000 or more, $10.00 each.

Indexes Available

The indexes to the NATIONAL SAFETY NEWS, June to December, 1949, and to the INDUSTRIAL SUPERVISOR, January to December, 1949, are now available and will be sent upon request to Council headquarters.

March Traffic Theme

The national traffic safety theme for March emphasizes drivers' signals. The title of the four-page leaflet prepared for use in that month is "Good Drivers Always Signal." Detailed information about the national traffic safety campaign may be obtained from the Council's Traffic and Transportation Division.

SAFETY POSTERS

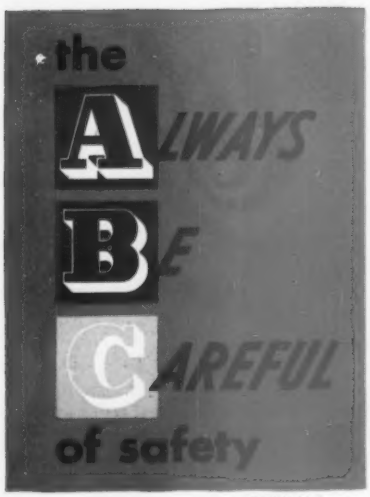
from
NATIONAL SAFETY COUNCIL

IMPORTANT

All posters displayed on these pages, except the jumbo poster, will be available through 1950, and may be secured as a part of N.S.C. membership service, or by purchase.

Posters numbered 8700 and up are new posters. Others are among the 744 posters shown in the 1950 Poster Directory.

Write to Membership Dept. of N.S.C. for further information.



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V-8652-A 8½x11½

8934-A 8½x11½

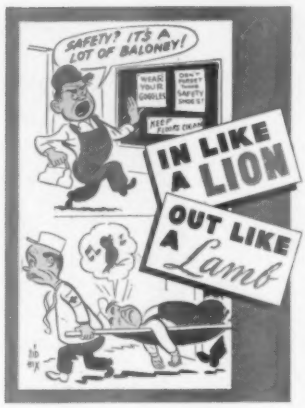
8630-A 8½x11½

8163-A 8½x11½

8647-A 8½x11½

Electrotypes or poster miniatures on this page are not available, nor can payroll inserts be supplied.

Posters below are printed in two or more colors
(Available only in sizes indicated)



NATIONAL SAFETY COUNCIL

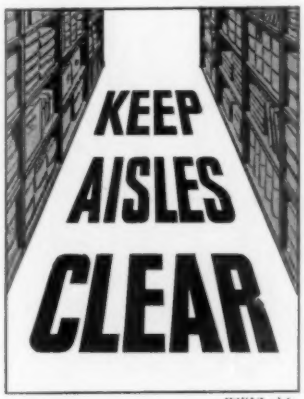
8933-C **25x38**

JUMBO POSTER for MARCH 1950

Jumbo posters 9′ 11″ by 11′ 8″ in size, designed for outdoor use, are issued monthly. They are available to members for $42.50 annual subscription.

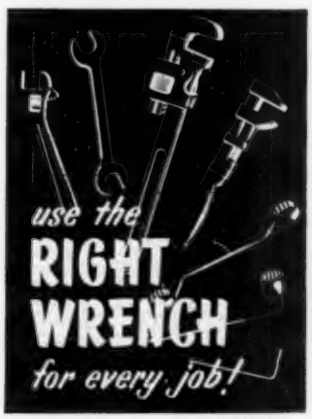
NATIONAL SAFETY COUNCIL

8730-B **17x23**



NATIONAL SAFETY COUNCIL

8873-B **17x23**



NATIONAL SAFETY COUNCIL

8885-B **17x23**

NATIONAL SAFETY COUNCIL

8317-A **8½x11½**

NATIONAL SAFETY COUNCIL

6385-B **17x23**

NATIONAL SAFETY COUNCIL

8892-A **8½x11½**

See box on page 66 for information about these and other National Safety Council posters.

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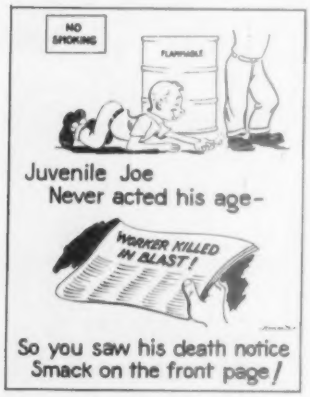
8923-A 8½x11½

NATIONAL SAFETY COUNCIL

8810-A 8½x11½

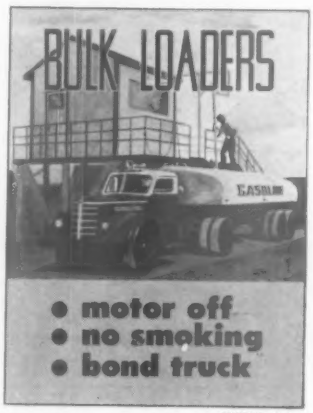
NATIONAL SAFETY COUNCIL

8877-A 8½x11½



NATIONAL SAFETY COUNCIL

8920-A 8½x11½



NATIONAL SAFETY COUNCIL

8919-A 8½x11½

NATIONAL SAFETY COUNCIL

8212-B 17x23

HELP
WANTED!
MEN and WOMEN
Persons having imagination and foresight, to contribute safety suggestions. Any and all ideas welcomed. Turn in yours today.

NATIONAL SAFETY COUNCIL

8308-A 8½x11½

NATIONAL SAFETY COUNCIL

7713-A 8½x11½

NATIONAL SAFETY COUNCIL

8922-A 8½x11½

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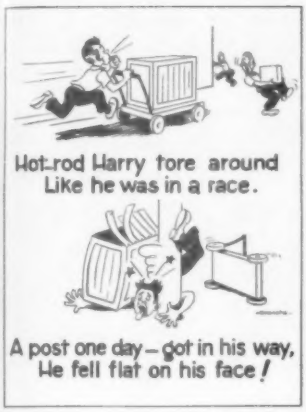
Posters below are printed in two or more colors
(Available only in sizes indicated)



8912-A 8½x11½

6265-A 8½x11½

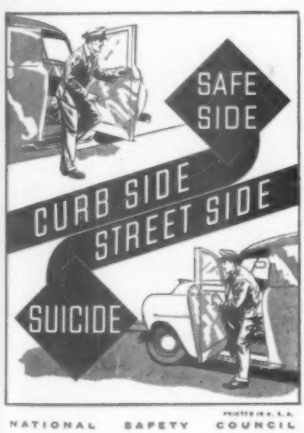
8375-B 17x23

Let's have a Spotless SAFETY RECORD this month
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
21 22 23 24 25
26 27 28 29 30
31
OR EACH NO-ACCIDENT DAY – BLACK OUT THE SPOT
NATIONAL SAFETY COUNCIL

5722-A 8½x11½

8085-A 8½x11½

T-8931-B 17x23



V-8928-A 8½x11½

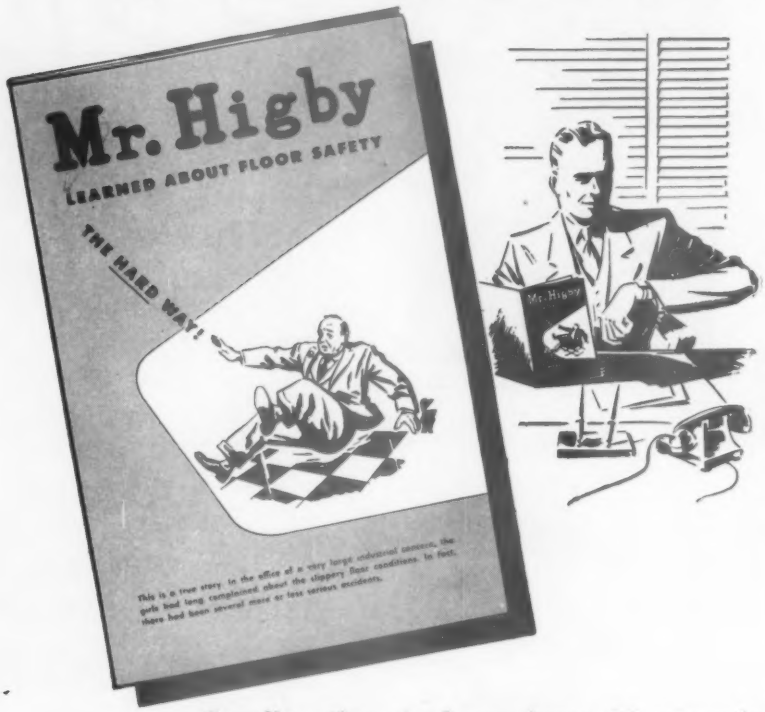
What's your driving I.Q.?
DO YOU always obey traffic signals?
DO YOU yield the right of way?
DO YOU dim your lights?
DO YOU always drive at a safe speed?
NATIONAL SAFETY COUNCIL

V-8930-B 17x23

V-8929-B 17x23

See box on page 66 for information about these and other National Safety Council posters.

This book...in 10 minutes... prevented 1037 accidents!



Reading time to learn how: 60 seconds

Of course there was more to it than that. But it started when the office manager of a prominent company read a copy of *Mr. Higby Learned About Floor Safety the Hard Way.*

In its pages he learned the solution to a long-standing problem: a waxed office floor hazard that was claiming 4 or 5 slip victims week after week. The result: a way to keep his floors so slip-resistant that in five years since (when 1040 falls might have occurred) *there have been only 3 slip accidents.*

If you've searched for an answer to slippery floor accidents, perhaps this booklet can help you, too. In plain talk it explains the whys and wherefores behind the care of floors. It tells how to avoid slippery floors, and how the Legge System of Safety Floor Maintenance can help you. And it shows you how to eliminate waste motion in floor upkeep to save precious dollars.

How much is it worth to *you* to read this book? There's only one way to find out. Send for a free, no-obligation copy today. Just clip the coupon to your letterhead and mail.

Walter G. Legge Co. Inc.
101 Park Ave., New York 17, N.Y.

Please send me a free, no-obligation copy of your Mr. Higby book.

Signed_____

Title_____

Types of flooring_____

Area_____sq. ft. NB-8,

LEGGE SYSTEM
of Safety Floor Maintenance

Copyright 1949 by
Walter G. Legge Co., Inc., N. Y.

Trophy Presented at Christmas Breakfast

Winning a trophy for accident prevention accomplishment offers excellent opportunities for the safety program. At the Pensacola, Fla., plant of Armstrong Cork

Company the plaque won in Group D of the Paper and Pulp Mill Division of the Paper Industry contest was incorporated in the Christmas greeting to employees shown in the above illustration.

It was presented to the employees at a breakfast the day before Christmas. Coffee and doughnuts were served from 7:30 to 10:00 a.m. This is the second consecutive year the plant has won this trophy.

Calendar Contest Winners for December

First prize in the National Safety Council's Safety Calendar Contest goes this month to Ramie L. York of Binghamton, N. Y. The safety theme in this contest was teen-age driving. Mr. Ramie's "last line" was judged best of all those submitted. It was:

Jack is one of the gayest of guys
And Jeanie has laugh-lighted eyes
Though they think life immense
They drive with horse-sense
They've seen 'hot-rods' cut 'hot-shots' to size.

Second prize was awarded to Mrs. Arnold Adams, Milton, Mass. Her last line was: *And Ride only with drivers as wise.*

Third prize was awarded to Miss Mary A. Swiston, Evanston, Ill. for the following line: *Chicken Clubs? Fender Benders? TOO WISE!*

Ten other awards were issued to:

Mrs. Guy Young, Dexter City, Ohio.
Mrs. H. C. Powell, Tucson, Ariz.
Mrs. H. G. Bauer, Denver, Colo.
Miss Grace Moffit, Kalamazoo, Mich.
Warrick E. Lee, Carbondale, Pa.
L. V. Longhway, Oklahoma City, Okla.
Mrs. C. Richard Rondi, Louisville, Ky.
A. C. Reynolds, New Hartford, N. Y.
E. Stickley, New Kensington, Pa.
Ernie W. Case, Akron, Ohio

A new 1950 series of "Rite-a-Rime" contests is now under way. The current contest features pedestrian safety.

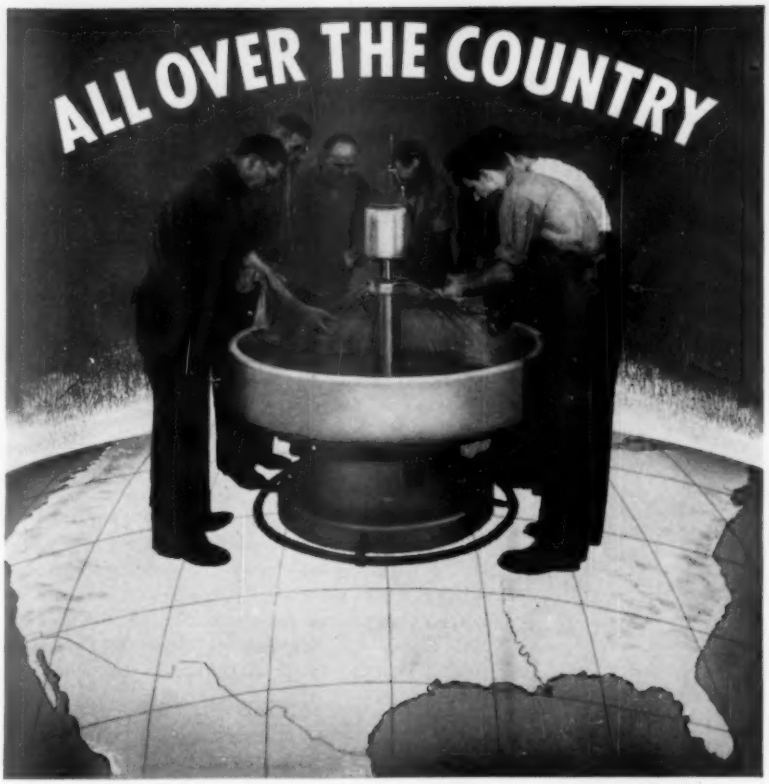
Defensive Drivers Allow For Others' Mistakes

A "Defensive Drivers Club" has been organized by Continental Oil Company, Ponca City, Okla., for drivers of company vehicles and for employees driving on car contracts. Each member is pledged to "defensive" driving—allowing for the other driver's mistakes.

Each member of the club is furnished with a lapel pin, a sticker for the dash of his vehicle bearing the defensive driver's creed, and a copy of NSC Safety Instruction Card No. 216, "Motor Vehicle Stopping Distances." Membership is voluntary and there are no dues.

The creed reads:

I will be a defensive driver. I will make allowance for the other fellow's carelessness, lack of skill, and knowledge. I recognize that I have no control over the unpredictable actions of other drivers and pedestrians, nor over conditions of weather and roads; there-



you'll find BRADLEY washfountains

A Few Recent Installations:

Bond Clothes
General Electric
Reynolds Tobacco
McCall Publishing
General Motors
Brown & Sharpe
Cincinnati Milling
Warner & Swasey
Minneapolis-Moline
Borden
H. J. Heinz Co.
American Car & Foundry
Remington Arms
Pennsylvania R.R.
Youngstown Sheet & Tube
Swift
Electro-Motive
Hughes Tool
Pan American Airways
Curtiss Wright
Canada Dry
Chicago Tribune
Diamond Chain

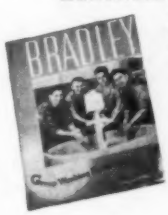
• In factories, shops, manufacturing plants of all kinds, all sizes, in every part of the country—modern washroom facilities are provided by Bradley Washfountains. Whether for additional facilities or modernizing an entire washroom, economical, sanitary Bradleys do the job better.

One Bradley serves 8-10 persons simultaneously with clean, tempered water. Foot-control protects hands from contagious faucet contacts. Self-flushing bowl prevents dirt collection.

Bradleys are durably constructed and easily installed. They have been made for 30 years, and you can modernize now with full confidence of continued service in years to come.

BRADLEY WASHFOUNTAIN CO.,
2237 West Michigan Street,
Milwaukee 1, Wisconsin.

Distributed Through Plumbing Wholesalers



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SAVE MONEY—

GET THE RIGHT CHAIN FOR THE JOB

Taylor Chain manufactures many grades and sizes of chain each for a definite pulling, binding or lifting job. Only false economy — needless chain wear and costly accidents — can result when incorrect chain is used for a variety of jobs. See your mill supply distributor or write the factory for help in selecting the proper chain for your needs.

PROOF COIL

Manufactured from C-1008 steel having an approximate tensile strength of 5,000 P. S. I. Formed and butt welded into short links.

BBB COIL

Manufactured from the same analysis steel as Proof Coil Chain. Formed and butt welded into shorter links for flexibility and greater distribution of load among more links.

HI-TEST

Manufactured from C-1017 steel having an approximate tensile strength of 85,000 P. S. I. Formed, butt welded and heat-treated. It is tougher and has greater resistance to wear than BBB or Proof Coil Chain.

STEEL LOADING

Manufactured from the same analysis steel as Hi-Test Chain. After welding it is heat-treated to produce a chain which will stretch at lower loads than Hi-Test Chain. High quality chain with a visible factor of safety.

S. G. TAYLOR CHAIN CO.
94 141st Street, Hammond, Indiana

Send for free copy of new booklet containing complete data on all types of Welded Chain.

TAYLOR MADE—
A GREAT NAME IN
Chain SINCE 1873

fore, I will develop a defense against these hazards. I will concede my right of way and make other concessions to avoid collision. I will be careful to commit no driving errors myself and will be defensively alert to avoid all accident traps.

The small bronze lapel pin bears the words "I am a Defensive Driver" imprinted over an owl, symbolic of wisdom. The design is not copyrighted and other companies are free to use it or adapt it for their own use.

J. S. Boylan, director of safety for the company, reports that more than 1000 employees joined during the first two weeks.

THE HONOR ROLL

Records of operation exceeding 500,000 man-hours, or one year, if exposure exceeds 250,000 man-hours, without a disabling (lost-time) injury are invited.

Alpha Portland Cement Co.

Easton, Pa.—Eight plants; 1526 employees; July 18 to November 28, 1949; 1,178,893 man-hours.

American Transit Assn.

The following records of member companies are reported by the American Transit Association.

Gold Certificate:

New Orleans Public Service Inc., Canal Div., Railway Transportation Dept.—667 employees; 1,935,772 man-hours as of November 11, 1949.

Silver Certificates:

Indianapolis Railways, Inc.—549,071 man-hours. Transportation Dept.—500,000 man-hours.

Bronze Certificates:

New Orleans Public Service Inc., Car Stations Equipment Div., Railway Dept.—255,881 man-hours.

Virginia Transit Co., Mechanical Dept., Richmond, Div.—274,083 man-hours.

Dayton-Xenia Railway Co.,—254,038 man-hours.

New York City Transit System, Eastern Section, Transportation Dept., BMT Div.—355-201 man-hours. Main Shop and Inspection Sheds—Car and Shops, IND Div.—348,302 man-hours. Maintenance of Way, BMT Div.—297,858 man-hours.

Beloit Bus Co.—302,445 man-hours.

Chicago Transit Authority, Transportation Dept., Surface Div.—304,788 man-hours.

Champion Lamp Works

Div. Consolidated Electric Lamp Co., Lynn, Mass.—February 9 to November 10, 1949; 688,038 man-hours.

Sylvania Electric Products Inc.

Wire Dept., Loring Ave. Plant, Salem, Mass.—3 years, 7 months; 1,189,800 man-hours.

Trinidad Leaseholds Ltd.

Pointe-a-Pierre, Trinidad, B. W. I., *Refinery Operations*—Records continuing unless noted:

Instrument Maintenance Dept., March 12, 1944, to October 31, 1949, 724,185 man-hours.

Oil Stocks Dept., September 12, 1946, to October 31, 1949; 713,580 man-hours.

Machine Shop Dept., July 21, 1948, to October 31, 1949; 692,125 man-hours.

Building Construction and Maintenance Dept., October 19, 1948, to May 19, 1949; 549,114 man-hours; terminated.

Fire Dept., July 1, 1940, to October 31, 1949; 530,125 man-hours.

Eastern Topping and Rerun Dept., September 6, 1944, to October 31, 1949; 403,470 man-hours.

Power Station "B" Dept., January 1, 1946, to October 31, 1949; 397,300 man-hours.

Roads, Drainage, Clearing and Earthwork Dept., October 2, 1948, to October 31, 1949; 340,252 man-hours.

Marine Plant Dept., April 16, 1945, to October 31, 1949; 259,428 man-hours.

Safety Panel

(From page 46)

One word of warning—all such material should be reviewed by the safety engineer to catch details which may be contrary to fact or established safety practice. I recall some cover shots which were poor examples of safe operation, and, of course, everybody and his aunt pointed them out. Some say this is a healthy condition. As a former editor, I agree, but not on the front cover.

In direct answer to the question I can only say that every channel is open. However, my advice to the inexperienced is to make your own channels. Go out and take pictures of what you are doing. Show how that hazard looked before it was corrected and after, and be sure to include the guy who suggested the improvement.

If you have a group that went a year without accident, get the picture and persuade your editor to give it top billing.

Warner News leans over backward to get the human side of the

SAVE MONEY

SAVE
Floor Space
Ceiling Space
Storage Space
Storage Time
Receiving Time
Production Time
Maintenance Time
Shipping Time

CUT COSTS WITH The "MASTER" Line

The "MASTER"® Line,
MATERIALS HANDLING EQUIPMENT
"Engineered to Save You Money"!

SPACEMASTER Electric Trucks
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MASTER JACKSTACKERS
JACKLIFT ELECTRIC Trucks
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Smart fleet of "SPACEMASTER" Electric Fork Trucks handle many kinds of materials in this public utility warehouse.

"SPACEMASTER" Electrics operate quicker, in less space. "SPACEMASTER" Electrics have low cost maintenance, less down time. "Standrive" feature lets operator pivot and turn and thus safely trail load. No need to turn truck and load around as his vision is unobstructed. Better visibility also permits accurate placement of forks and spotting of loads . . . "Deadman" brake; greater stability; plus free, quick access from either side give greater SAFETY . . . Send For Bulletin 25 Today!

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PRODUCTS INC.
163 WALNUT STREET, WATERTOWN 72, MASS.
Midwest Plant: Crawfordsville, Ind.
REPRESENTATIVES IN PRINCIPAL CITIES

it wouldn't have happened with

BERYLLIUM-COPPER SAFETY TOOLS

on the job

The sure way to dodge the effects of fires or explosions caused by sparking is to eliminate the hazard entirely — with Beryllium-Copper Safety Tools. If your operations involve the use of inflammable or explosive liquids, gases or dusts, these tools will protect your property, production and profits.

On top of that, Beryllium-Copper Safety Tools are non-magnetic. They resist corrosion which causes failure of many tool materials. And they are tougher for long life under severe service conditions.

Write today for Catalog No. 348 showing the complete line of Berylco Safety Tools.

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READING • PENNSYLVANIA

news. In each monthly issue we publish the President's Safety Trophy standings, names and photographs of contest winners, groups which have won honors, description of new regulations, how the prescription goggle policy operates, etc.

Employees Read Them

MR. ROBERTS:

We receive the fullest cooperation from *The Newsliner* and consider this cooperation an important cog in the safety program of the Chicago and North Western Railway System.

Each month, two entire pages are devoted exclusively to safety, and, when deemed advisable, additional space is allotted. Periodically, safety is the subject of the President's Message appearing on the inside front cover each month.

There is no doubt but that the articles are read. Employees refer to them from time to time and do not hesitate to call inadvertent mistakes to our attention.

Editor on Committee

MR. CORLL:

The editor of Weirton Steel Employees Bulletin and our safety department work in very close cooperation on our safety program. The editor is a member of our general safety committee and also sits in on numerous plant safety meetings.

Feature stories on safety are written by means of the safety department and the editorial staff cooperating closely on the details with accompanying pictures to illustrate the story.

The editorial staff photographer takes many pictures requested by the safety department to use in their safety program.

Close and friendly relations are an absolute necessity for a successful safety program. An editor, being more experienced in writing, can take the details furnished by the safety department and make a very interesting story that otherwise might be lost.

An employee publication distributed to all the employees can be an important medium in advancing a safety program, if the safety material is written in their language and about the jobs they know best or are most familiar with throughout the mill.

Fire Fighters

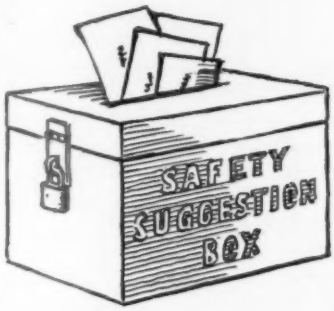
(From page 39)

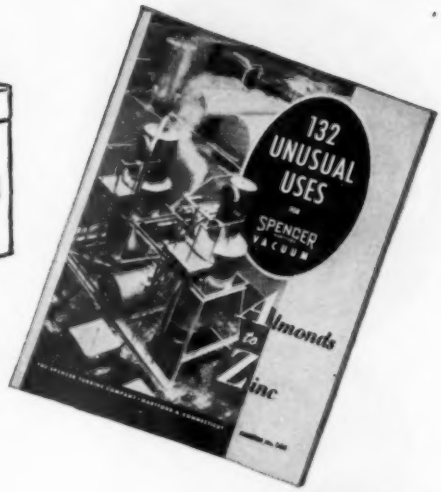
tures exceeding 2000° F. was finally selected as the most suitable available insulator against conductive heat.

It was recognized that the most practical radiation barrier must be of the reflector type; thus radiant energy falling on the suit would be reflected out of the system and would not appear as a heat load on the conductive insulation. Since reflection is purely a surface phenomenon, the reflecting medium need be only sufficiently thick to afford a reasonably substantial, continuous surface; having a high reflectivity to radiation in the infra-red range of the spectrum. Such a reflecting medium must be stable at temperatures approaching 2000° F. and have a minimum of high temperature oxidation or other surface degradation.

After surveying the field of potential materials, it was concluded that any highly polished metallic surface would have the desired reflectivity to radiant heat but only a few possessed the necessary high temperature characteristics. Of these, silver (melting point, 1760° F.) and aluminum (melting point, 1220° F.) offered the most advantage of commercially available metals. Since only the reflective surface was desired, the use of thin foils of these metals was predicated.

For maximum effectiveness, the radiation barrier must be as near the outer surface as possible. It was therefore concluded to place a silver foil radiation barrier near the outer surface of the suit covered by only enough conductive insulation to maintain the silver below its fusion point. In evaluating the effectiveness of radiation barriers, varying numbers of bar-





132 NEW IDEAS WITH SAFETY AS AN EXTRA DIVIDEND!

Here is a book full of ideas for accomplishing difficult production tasks with great speed, accuracy, and reduced costs, and yet every one of the suggestions might well be dropped into the Safety Suggestion Box.

For instance, Spencer Vacuum handles hot materials such as ashes and cinders, and cleans out the bottoms of 30 foot car wheel pits while still hot.

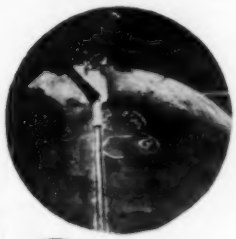
Conveying of chemicals, foods, silica sand and other materials by the ton, is accomplished without scattering dust.

Fumes from autos in repair shops, from welding operations and in chemical plants, are collected at their source.

Rock drills used in quarries or for concrete are provided with a hood connected to Spencer Vacuum.

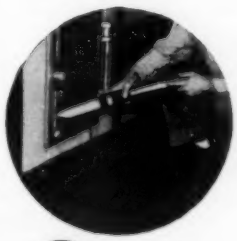
And, with the same Spencer Equipment, floors, walls, ceilings, pipes and all machinery can be kept clean.

ASK FOR THE SPENCER BULLETIN



Recovering Welding Flux

Chemicals



Removing Cocoa Shells

356-D

SPENCER HARTFORD VACUUM CLEANING

THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

SCIENTIFICALLY
FILTERS
GLARE
OF ACETYLENE AND
HYDROGEN FLAME
and BURNING FLUX

Helps Speed Up Production

Through the BURT-WELD LENS the welder sees his acetylene or hydrogen flame only as a pale cone at the burner tip of his torch – so small that one foreman actually thought his torch had gone out! Strain and fatigue almost entirely eliminated–mistakes in work reduced – production speeded up. BURT-WELD Lenses are scientifically ground, polished, and optically perfect–only slightly opaque in density–fit any goggle taking 50 mm round lens.

Write for bulletin and prices

B. F. McDONALD CO.

Manufacturers & Distributors of Industrial Safety Equipment

5112 South Hoover Street
Los Angeles 37, California
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riers, ranging from one to five, were interspersed through the layers of conductive insulation. It was found that maximum efficiency was obtained with three such barriers. Further experimentation established that aluminum foil could be safely employed as the two innermost radiation barriers.

From this work the end-point crash rescue suit material emerged with the following general construction; an outer shell of ordinary glass fiber cloth as a sacrifice layer to withstand abrasion and other physical abuse incidental to usage; a shell of high silica fiber glass cloth for high temperature resistance; a silver foil radiation barrier; batt of high silica glass wool; aluminum foil radiation barrier; batt of high silica glass wool; aluminum foil radiation barrier; batt of glass wool; neoprene coated glass fiber cloth as a moisture and vapor barrier; soft, heavy wool or cotton fabric; rayon or nylon, low-friction lining for easy donning. This composite fabric averaged approximately one-half inch in thickness and fulfilled the basic requirements of maintaining an 1870° F. temperature differential for 3 minutes and having sufficient durability and functionability.

Considering the high temperatures and high heat loads to which the wearer would be subjected, every part of the body had to be protected from either direct or indirect exposure. Thus a one-piece suit with complete head, hand and foot protection and positive, long overlapping junctures, was judged mandatory.

Head protection was accomplished simply by using the conventional pressed fiber helmet covered with the above described body material. This helmet covering was extended to form a bib in front and back which was joined together under the arms by snap fasteners.

Visual protection, which posed separate and distinct problems, was accomplished concurrently with development of the body material. It was necessary to maintain adequate visibility and at the same time obtain a resistance to heat penetration comparable to that achieved in the body material. As a primary safety measure it was considered necessary that the vision plate be capable of withstanding sudden and extensive changes in temperature without failure. This was accomplished by use of a commercially available high silica glass which was found in laboratory tests to withstand a 2000° F. thermal shock without deleterious change.

As a further precaution, it was decided to employ two thicknesses of this glass separated by a small air space to prevent complete failure of the panel through accidental fracture. This double construction also provided a necessary degree of conductive insulation. Radiation insulation was accomplished by developing a metallic reflective layer on the protected surface of the outer layer of glass. The desired characteristics were obtained with a very thin film of gold; however, a number of other metals also offered possibilities in this field.

The complete enclosing of the head and body created a question of air, or rather oxygen, supply for the individual. The appreciable enclosed space within the suit would afford a limited supply of breathable air. Should this air supply prove inadequate, it could be supplemented by an air bottle containing a 10-15 minute air supply carried between the shoulder blades or on the chest and led to the facial regions by a short hose. The use of oxygen, although more efficient, was considered unnecessarily hazardous. The use of an auxiliary air supply, by creating a positive pressure inside the suit would offer the thermal advantages of preventing hot gases from seeping into the suit, would tend to maintain interior spaces and would serve as a cooling and humidity-reducing medium.

A mitten type gauntlet of slightly lighter construction than the body material was selected for hand protection. The lighter construction was adopted because of the greater heat tolerance of the hand and the need for manual dexterity. Protection of the palm from abrasion was left open to the dictates of service, such materials

as neoprene coated glass cloth, chrome tanned leather, etc., offering sufficient abrasion resistance.

With regard to footgear, spat-like coverings of body material affording complete coverage were designed for wear over ordinary shoes. As an alternate and more complete protection, should the pick-up of conductive heat through the ground prove excessive, an asbestos-soled shoe with an integrated upper covering of body material was developed for wear over conventional footgear.

A prototype model of a crash rescue suit incorporating these developments was manufactured by a commercial agency on government contract in 1947. However, sizing and fabrication difficulties prevented subjective testing although tests on the various components were favorable. These difficulties have since been worked out and a further model of this suit has been fabricated by the Aero Medical Laboratory and is now under test.

The design of the radiation reflecting firefighting suit is predicated on protecting all body surfaces with a heat reflective layer. This suit may be either one or two piece and is to be worn over ordinary seasonal clothing. The head is protected with a pressed fiber helmet covered with a skirt or bib to protect the neck. Visual protection is accomplished with heat absorbing glass or infra-red reflecting glass or plastic similar in principle to that used on the crash entry suit. No respiratory protection is considered necessary and the helmet may be vented to allow unrestricted air flow. Footgear protection is achieved by a spat of the reflecting material; however, a reflective surface may be developed on the footgear itself. Handgear may be conventional gloves with a back covering of reflecting material if desired.

The present character of the Air Force fire entry suit and radiation reflecting type fire-fighting suit is illustrated by the accompanying photographs. The work necessary to bring these suits to this advanced experimental stage or possibly pre-production stage represents the contributing efforts of several of the Air Materiel Command's Engineering Laboratories, the cooperation of many industrial facilities and the generous contribution of sample materials, and the contribution of much useful data by other government agencies, commercial and industrial organizations engaged in correlative endeavors.

Safety Starts in the Village

(From page 19)

timber promptly, the second offense calls for a visit to the office of the superintendent, where the offender is warned that a third offense will not be tolerated. For a third offense the man is released to find employment in less exacting fields.

When asked to explain reasons for the effectiveness of the safety program, local management stressed the following:

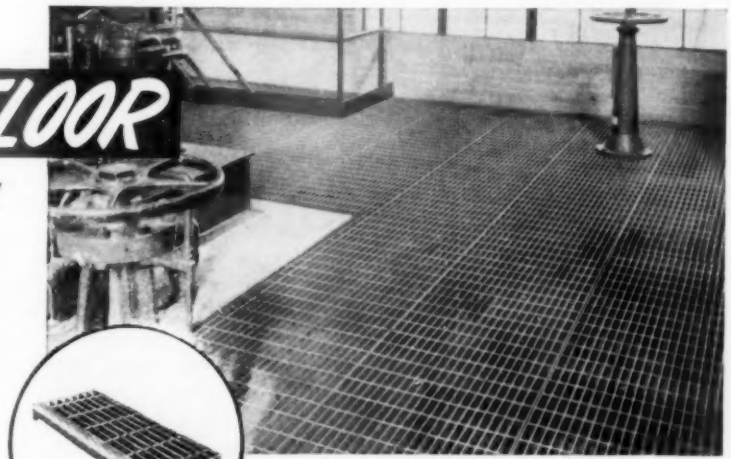
1. The safety program begins

the

IDEAL OPEN FLOOR

for every industry

IT'S Blaw-Knox *Electroforged* Steel Grating! *Exceptionally strong,* electroforged into one solid piece. *Non-slip* twisted cross bar for safe footing. Maximum open area; self-cleaning, with no corners to clog; easily installed, easily maintained. Adaptable to many uses, indoors and out, for every industry.



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Designed for tremendous strength against impact. Available with rolled diamond checker plate nosing (illustrated); twisted crossbar nosing; or abrasive nosing.

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BLAW-KNOX ELECTROFORGED STEEL GRATING

POPULAR
eyeglasses

for industrial workers

Sellstrom No. 602 Industrial Eyeglasses have all the appearance of expensive prescription glasses.

These industrial eyeglasses were especially designed to supply the demand of workers who object to goggles because of their appearance. These glasses have "class," "eye appeal."

The demi plastic molded transparent amber colored frame is attractive as well as practical.

The frame and temples will fit most faces, but can easily be adjusted if necessary.

The temples are fastened with sturdy optical hinges. The lenses are of the "snap-in" type.

These glasses weigh only 1⅝ ounces. Each pair comes in a case made of tough long-wearing leather grain plastic.

These eyeglasses are furnished with 42 x 45 m/m dropeye lenses as follows:

602 LCH 1.25 Diopter Curved Clear XL Hard Lens

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in the community, extends through the bathhouse and mine buildings, along main and secondary entries. With good safety conditions and practices thus far, it is only natural that men will maintain equal standards at the working face.

2. The mine is comparatively young. It was opened in 1941 and has been driven during a period of extensive safety activity.

3. Its early management was headed by a young but capable mine foreman who surrounded himself with supervisors who were responsive to his safety ideas as well as those of the company's accident prevention department and the various governmental mine safety agencies.

4. Generally, the mine is fortunate in having a better than average roof.

5. Management has been able to select conscientious men with good records. The mine itself started with a good reputation and has maintained it in the community.

6. Management and men share a feeling of pride in their job.

The Big Pour

(From page 23)

were double-tested. Water hoses were readied for use in case of runouts. Even small torches to light the gas pouring out of vents in the mold had be provided—there would be no time to look for such items when 150 tons of molten steel was baking the gases out of the sand.

The night before the pour, the final job began. At carefully calculated time intervals, the three furnaces (two in Foundry No. 1 and one a hundred yards away in Foundry No. 2) were charged with scrap and lighted. Last minute checks were made of the columns supporting the crane tracks, and even of the hand rails designed to prevent falls.

By early morning, after the safety engineer had made a test run of the tracks between Foundry No. 1 and No. 2, the heats in Foundry No. 1 were tapped. Up on the open hearth bridge we watched the ladles fill, watched them carried away from the furnaces. But still the huge door closing the railroad track entrance remained closed, and the two ladles were lowered to the floor. Up on the bridge, the Continental men looked at the door anxiously, looked repeatedly at their watches.

Out on the floor, all business had been suspended. At the pouring cups, waiting for the pour, stood three crews, each in charge of a foreman. The general foreman was standing by, personally in charge of the men at the cups. The few plant men working on other jobs were off to the side, watching as tensely as those directly responsible.

The minutes dragged by, till, long after many a Continental executive's nerves had been badly frayed, the huge door opened, and a ladle on a flat car was pushed into the foundry by a diesel switch engine. The cranes positioned the three ladles, the white-coated men at the cups waved their signals, orders snapped back and forth. Finally the cranes were still—the cranes which were equipped in each case with double crews, two men in each cab, and a crane repairman and electrician on the top deck. Once the pour started there could be no delay without serious danger to personnel and heavy financial loss.

White coated men heaved on the long handles, and, in proper sequence, the spouts at the bottom of the ladles opened, the white sparks began to fly, and the foreman peered into the mold, shielding his face against the heat with sheet metal as he watched the progress of the pour.

In 14½ minutes, the last spout was shut, the cranes were toting the ladles away from the pour, and the Continental men on the bridge beside me could unclench their fists again.

The afternoon was anti-climax. A 25,000 pound heat poured into the riser. A light crane swung the "hot top" (an electric furnace with three electrodes) onto the top of the riser, and the electrician and the general foreman worked till the arc was bright below the cap of fire brick. For a couple of

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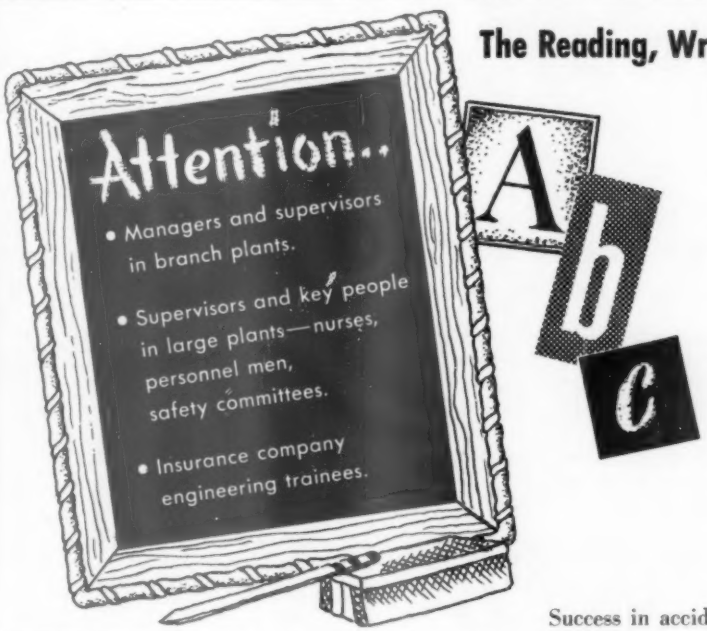
20 N. WACKER DRIVE CHICAGO 6, ILLINOIS


Attention..
• Managers and supervisors in branch plants.
• Supervisors and key people in large plants—nurses, personnel men, safety committees.
• Insurance company engineering trainees.
A
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C

The Reading, Writing, 'Rithmetic of Safety . . . For Part-time Safety People

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days the "hot top" would keep the riser molten to take care of shrinkage. Another 60 days the casting would lie in its flask, cooling. Then a heavy crossbeam would be suspended from the hooks of the two heaviest cranes in the shop, and the casting would be lifted with cables attached to the crossbeam. In a matter of more weeks, millwrights in a nearby plant would be unloading the anvil block and setting it in place.

The story of the big pour isn't primarily a safety story at all. It is primarily a story of the kind of production genius that has built America.

Its moral for safety men is simply that it demonstrates clearly the fundamental premise of the industrial safety movement:

Safety is the essential ally of production, without which there can be neither efficiency nor quality.

Electric Hand Tools

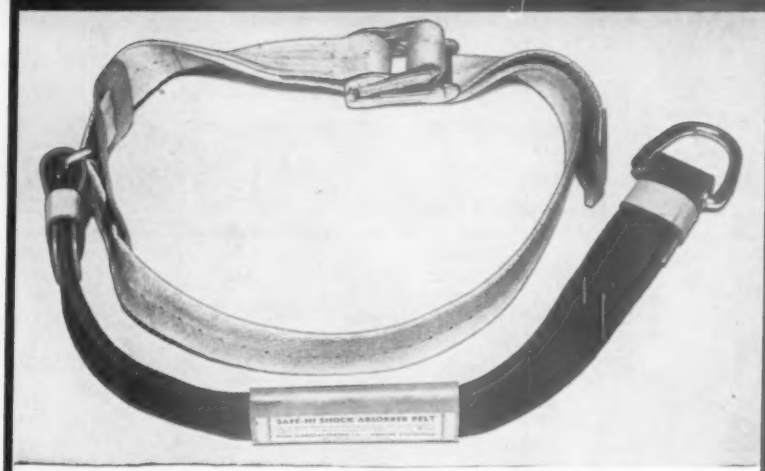
(From page 31)

flash will cause the operator to suffer minor burns, and may cause him to drop the tool.

There is only one way to eliminate the hazard of shorts, and that is proper maintenance. Tools should be cleaned regularly, and this can be done very quickly by using a compressed air blow gun —first, by blowing the compressed air through the exhaust ventilation holes or slots located at the fan end of the stator case. After this, you should blow the air through the intake vents at the commutator end of the tool. This last operation is more effective with the motor of the tool running.

It is difficult to conceive the carbon brushes causing or contributing to accidental injuries, but poor commutation, which is the direct result of improper or badly worn brushes, is responsible for 60 to 70 per cent of all armature failures in universal electric tools. Regular inspection of brushes and replacement when

Safe-Hi
SHOCK ABSORBER BELTS



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worn will pay dividends. Replacement brushes should always be purchased from the manufacturer of the tool as the correct hardness and proper sizes of brushes promotes long and economical operation of the tool.

Let us have a look at the chuck. Note the three jaws which hold the drill bit. Operators of electric drills should be instructed to properly insert drill shanks in chucks. Always bottom the drill shank in the chuck and lock it with the chuck key by progressively inserting the key in all three holes and turning until tight as possible. This will save breakage of chuck jaws and drill bits and help prevent accidents. Your tool repair man should inspect chuck jaws regularly and replace them when worn.

Worn chuck jaws or drill bits which are not properly secured in chuck jaws allow the drill bits to slip, and here is what happened in one case. The operator was working on a scaffold three feet high. He was leaning against the breast plate of the drill, applying pressure while drilling. Suddenly, the drill bit stopped turning. The chuck continued to turn; the chuck jaws evidently scored. The drill bit shank and the burr from the score evidently caused the shank again to become tight in the chuck and the jerk or torque twist that came as the drill bit resumed rotation caused the operator to lose his balance. He half fell, half jumped off the scaffold. The net result—one broken ankle.

The momentary switch would have prevented this accident if the operator had simply raised his finger, but the moment that provided this escape was entirely too short for this particular operator's mental reflexes. The accident undoubtedly could have been prevented in the tool room.

Here are some suggestions as to how you can establish regular economical inspection of universal electric tools. For example, if your plant uses universal electric tools in production, have the man

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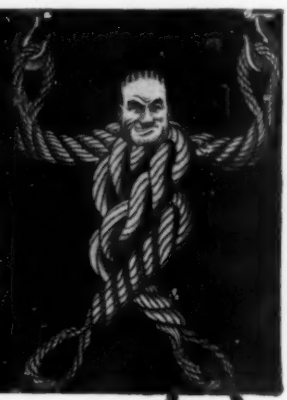

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in charge of the tool repair department make a check to determine how many days the various classes of tools will operate before it is necessary to replace the carbon brushes. The answers will show that grinders and sanders require brush changes every 15 or 20 working days; screwdrivers, nutsetters and drills every 20 or 25 working days. The life of the brush will depend upon the actual hours of usage. Your repair department can then set up a card record, and at regular intervals specific tools will automatically come up for servicing.

Since the tool now requires a new set of brushes, this is the time for inspection and general maintenance. The tools should be entirely cleaned. The commutator on the armature should be sanded down or turned down until it is smooth to permit better comutation and to provide longer life for the armature. Loose wire joints or armature leads should be resoldered. Worn spots on the wiring should be properly insulated or the wires should be replaced. The cable, the plug, the ground connection and the chuck jaws should also be carefully checked as previously outlined.

Now is the time to check the bearings and the gears, replacing worn bearings where necessary and making certain sufficient fresh lubricant is in the gear case. On screwdrivers and nutsetters, the attachments should be carefully checked and worn jaws and other parts replaced. Little or no service can be performed on the modern switch. It is invariably a totally enclosed unit that cannot be repaired, but must be replaced when it becomes inoperative. Its life has been greatly prolonged by sealing it completely from dust, moisture and other foreign matter.

Certainly a schedule must be set up which will put into the repair department the proper average number of tools per day to cover your plant usage. Once this pro-

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gram actually gets under way, you will find a very high percentage of your tools will go out on the production line and will stay there without further attention until the date for their next periodic inspection.

In plants where tools are issued to operators on production lines and are returned to the tool room only when repairs are necessary, it is a good policy to have a tool boy who goes in to the shop, delivers replacement tools to the operator and picks up the tools scheduled for inspection. In plants where tools are returned to the tool crib every day at the end of the work period, the crib attendant simply turns in to the tool room the tools scheduled for inspection.

If portable tools are used only for maintenance in your plant, make some one responsible for inspection and repair, for the proper storage of the tools during the time they are not being used, and sell that person on the fact that no one should ever be expected to use a tool which is not perfectly safe, and that the only safe tool is one that is properly maintained and inspected regularly.

This program is definitely self-sustaining. It will prolong the life of tools and automatically lower maintenance cost. It will increase production by decreasing delays due to tool failures, and it will be a most effective weapon against accident hazards.

We have considered, in a general way, maintenance common to all electric tools. Now we will check a few tools which have a high accident hazard when improperly used or where maintenance is poor and inspection negligent.

Operation of portable power saws presents little, if any greater, hazard than using an electric mixer in your own kitchen. The spring-actuated guard has a positive action. All saws are equipped with guards of this type. The spring mechanism that actuates

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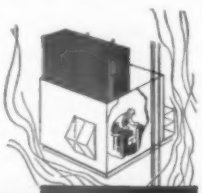

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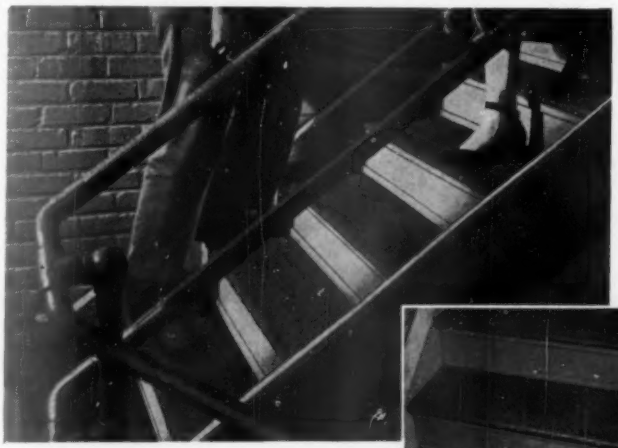
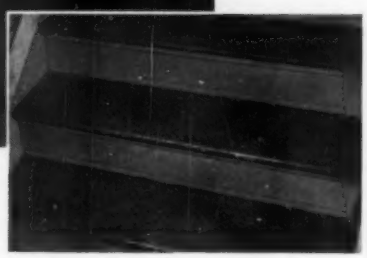


Feralun Safety Treads installed in 1923, in office of RCA Victor Division, Camden, N. J. (Courtesy Public Relations Department, RCA Victor.)



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this guard, and the bearing it rides on, are almost completely sealed from the possibility of sawdust or other foreign matter getting into the working parts.

A built-in blower tends to deflect the sawdust or cuttings away from the operator and away from the guard assembly, but on the job guards of this type can accumulate enough dirt eventually to make the guard sticky or sluggish in operation. Furthermore, guards can become sprung or distorted as a result of rough handling or accidental dropping. If portable electric saws are used in your plant, the men who use these saws must be thoroughly sold on the necessity of keeping this guard assembly clean and free from distortion. The guard should be frequently checked to make sure its return action is positive and complete. When sluggish in action, it should immediately be taken to the toolroom for service.

Every manufacturer furnishes with his saws complete service information, and servicing of these guards is adequately covered. If the service manual has been lost or misplaced, a new one will be furnished on request.

The various saw manufacturers have their own ideas about design of the saw shaft or arbor, but all of them equip these shafts with locking or clamping arrangements that securely lock the blade in position. Since threaded devices are used, the thread is cut in the direction that makes rotation of the blade tend to tighten rather than back off the lock or clamp.

Saw operators should be instructed to check the blade occasionally for tightness. A special wrench is furnished with each saw for this blade lock or clamp. No tool room man should ever hand out a saw without checking the blade. Furthermore, if he finds it cannot be firmly locked, he should check the thread sections. If they are worn or scuffed, that part should be replaced before the saw is issued. A loose blade can produce very serious consequences.

All saws have momentary safety switches, that is, the tool will operate only so long as the trigger is depressed. But here is a new

idea in safety; saws cannot be started accidentally. The switch trigger has a positive lock on it. In picking up, carrying or handling of the saw, pressure against the trigger cannot accidentally start the saw. You must release the lock and depress the trigger at the same time to start this saw. The lock is simple; it requires little or no attention. If it jams, you simply cannot start the saw until it is serviced.

The repair man will keep the ground wires connected on saws as they are generally used where hazard of shock is greatest. He will keep the guard in good working order and will make certain saw blades are tight. The operator will always connect the ground wire and check the blade and the guard before starting to use the saw on the job.

Almost every industry uses portable grinders. You may be using pneumatic grinders that operate on compressed air; universal electric grinders that operate on single-phase AC current or DC current; or high frequency grinders that operate 180 cycle or 360 cycle AC current.

Let us do everything possible to discourage and eliminate the practice of using grinders without wheel guards. We should insist on our repair man or tool room man putting a guard on every grinder he issues, and we should insist on the grinder operators using these guards at all times.

Another important suggestion is—you might occasionally check the grinders in your plant to see that the grinding wheel flanges or washers are the approved size for the wheel being used. The manufacturer furnishes the recommended size with the grinder, but sometimes these become lost and repair men or operators substitute any old flat washer of any size.

While you are checking the wheel washers, take a look at the nut which locks the wheel on the spindle; is there sufficient spindle length to get the full nut threaded on? Sometimes users install wheels on grinders that are wider than the spindle was designed to carry; hence you cannot get a full nut on the spindle. This definitely

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is not safe, and you should either secure proper wheels or longer spindles for your grinders.

Take a look at the condition of the wheels being used. Are they out of balance due to wear? If so, send them in for dressing. Note the speed and capacity of the grinder. You will find it on the name plate on all grinders, and on pneumatic and high frequency grinders, there is an extra caution plate indicating maximum wheel sizes and types. Do not permit use of wheels beyond recommended sizes. All these suggestions are common to all grinders, and all of them will help eliminate the hazards of wheel breakage.

The general maintenance precautions covering other electric tools also apply to universal and high frequency grinders. A word about pneumatic grinders. All manufacturers build in the pneumatic grinders (capacities larger than 2½") a governor which automatically cuts the air supply in half when the tool runs up to maximum free speed. This immediately retards the speed of the grinder and holds it well within safe operating speed. This governor requires only that it be cleaned and lubricated at regular periods and that worn parts be replaced. Good tool repair men do this every time the grinders come in for new blades, which are replaced regularly to restore the power of the grinders. Make certain your tool repair man carefully services governors, otherwise you may have this experience.

In a large foundry a wheel broke on a pneumatic grinder. The operator suffered a very severe head injury and lost one eye. An inspection of the grinder showed it could attain free speeds in excess of 8,000 RPM. The safe working speed with an 8" bonded wheel was 4,500 to 4,800 RPM; the governor originally was set to cut out at 4,300 RPM. However, the governor in this grinder had long been inoperative. It was

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WAREHOUSES: BROOKLYN, CLEVELAND, NEW ORLEANS, LOS ANGELES

Important: Did you note the "Radical reversal of medical teaching" in TIME Magazine? A report based on 10 years observation by 91 U. S. Skin Specialists calls Foot Baths "Futile"—"Illogical"—"Potentially harmful." Onox on the other hand is a safe, non-poisonous skin toughener. IT STEPS UP RESISTANCE . . . INSTEAD OF BREAKING IT DOWN! Try the Onox way. You'll be surprised!
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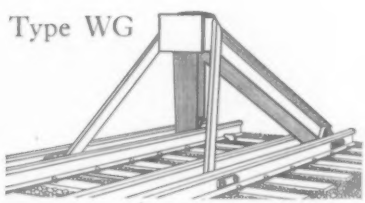

Let us help you modernize your tracks; make them efficient for every day use and safer too. Catalog free. When a bumping post is knocked out don't simply say "they hit it too hard" and let it go at that. Your investigation will lead you to use Hayes Posts, designed by engineers for engineers. Hayes has led since 1903 in safety devices for railway side tracks; Bumping Posts, Cushion Wheel Stops and Derails.

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rusted securely in a wide open position and an important part was missing.

Several other grinders in this foundry were in as bad or worse condition. The tool repair man's excuse—he didn't have the time to properly service the tools, and the boss and the men didn't care, just so the grinders had plenty of pep and power. (P.S.—none of the grinders that I saw in this shop had wheel guards.)

Sanders, like grinders, are available for operation on compressed air, ordinary current, and high-cycle current. They are even more extensively used than grinders, particularly in the automotive, metal and wood-working industries. Due to the nature of the abrasive disc, frequent changing and replacement of discs is necessary. Operators usually change discs right on the job, and they should be cautioned to make certain the clamp nut which locks on the disc and pad is always securely tightened.

Tool repair men should make it a practice to inspect the threaded section of the spindle and the nut so that maximum tightening of the assembly can always be secured. Worn and damaged pads should always be discarded, otherwise the high speed and out-of-balance condition of the pad will set up severe vibration. This could snap off the spindle and cause a serious accident.

A good suggestion, wherever possible, is to suspend tools from balancers. Tools suspended have many operational advantages—improve efficiency of the operator—save money on maintenance and help prevent accidents. An operator cannot drop a tool suspended from a balancer, and neither can he or anyone else trip over it.

Industrial Medicine

(From page 25)

be able to help that man get out of the "rut." Maybe it is his eyes or his ears. Maybe he has domestic or financial troubles which get his mind off his work. You know, the nurse is a wonderful counselor if you give her the opportunity.

I could list any number of ways

Headrest Goggles W-50 with Filter Lenses for Gas Welding, Cutting, and Brazing

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"Don't Gamble!"

Type WR-50, same as W-50 but with Elastic Head Band

Eye injuries cost industry many millions of dollars annually. Yet with proper precautions 90% of these can be prevented. All too many seem to be gambling on their good luck—and with disastrous results. Far better to follow the recommendations of safety experts and choose the right protection for each job.

For Gas Welding, Cutting, and Brazing, Jackson Headrest Goggles type W-50 are light and easy to wear, with or without prescription glasses, are simple and easy to adjust, easy to raise and lower. Goggle assembly is hinged from headrest with telescopic arms, held gently against the face by concealed springs. Spring clips hold arms to headrest to provide added adjustment and easy replacement. Headrest is of light, easy to clean plastic, adjustable for size. Plastic eye cups are easily fitted to the face. Outside of each cup has ventilating screen to prevent fogging and baffle plate to keep flying particles and light rays out. 50 mm. glass lenses are available in standard shades from 3 through 6, and have cover glasses to protect them.

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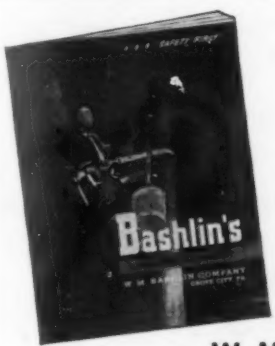

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W. M. BASHLIN CO. Grove City 3, Pa.

the medical profession can aid in any safety program, but at the head of the list I would put their ability to assist in good housekeeping.

Good housekeeping not only reduces accident hazards, but has a psychological value as well. The employee, once he is convinced of the need of cleanliness and orderliness, will do his part in maintaining the best of conditions. Management must supply the means and the incentive and a good employee will follow through.

Why do we have medical service in our plants? Is it merely to comply with the state laws? Is it merely to render first aid to the injured? I hope not, yet, I fear this is true in many plants. The rendering of first aid and the follow-up upon industrial accidents is not sufficient if one is to get full benefit from the professional people assigned to that service. In the plant physician and industrial nurse there lies a fountain of experience and professional knowledge which should be utilized to the utmost; not only in caring for the unfortunate victim of an industrial accident or disease, but in educating the individual in health, safety, hygiene, sanitation, and protecting him from all types of hazards.

The medical service of a plant is not limited to the every-day attention of the plant physician and nurse. Behind these professional people there exists a large field of experts and specialists ever ready to jump into the game and assist your people. First of all, we have the plant's local consultants available at all times for conferences upon individual cases. The plant physician, as a rule, is sort of jack of all trades and master of only a few at the most. To assist him he can call upon the eye specialist to remove the deeply imbedded foreign body in the eye, or examine the employee's eyes for proper fitting glasses. Then there is the orthopedic surgeon to assist and advise upon those difficult skeletal disabilities that arise. In

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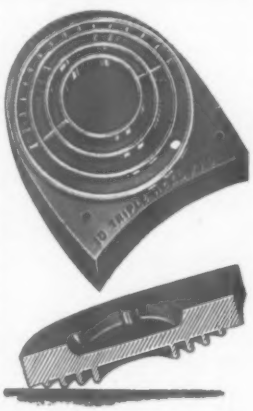

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The Triple Safety Heel was designed to minimize foot slipping accidents. It has a tread design of circular ribs with connecting cross bars that causes suction. In walking it gives road contact of one inch, where ordinary heels contact only on the edge. Laboratory tests show Triple Safety Heel has 97% road contact and traction.

Design permits rubber to flex, absorbing body shocks, minimizing fatigue. Triple Safety Heels will give longer wear and reduce slipping accidents on wet or slippery floors.

WRITE FOR CIRCULAR

TRIPLE SAFETY HEEL CO.
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fact, there are one or more representatives of each medical and surgical specialty waiting for his call.

That is just the first line of defense. In addition, we have the municipal, state and federal health units with their physicians, hygienists, physiologists, chemists, etc. You may not realize it but there exists a large army of professional "gray matter" ready at all times to assist industry, large or small, in health and safety problems. Your contact to receive this added benefit is the plant medical service.

Many years ago the American Medical Association went on record as saying, "It is now gradually becoming recognized that the prevention of accidents is dependent more upon the physical and mental fitness and the proper placement of employees than upon mechanical safeguards, shop discipline and safety crusades."

Maybe the speaker did exaggerate some in his endeavor to make a point. His statement of course, is open to debate and I for one firmly believe that all phases are of equal importance and that none of them can be neglected. We must interpret his thinking and ultimate goal into a belief that the best possible returns in production and safety depend to a large extent upon the individual's health, state of mind, nutrition and comfort.

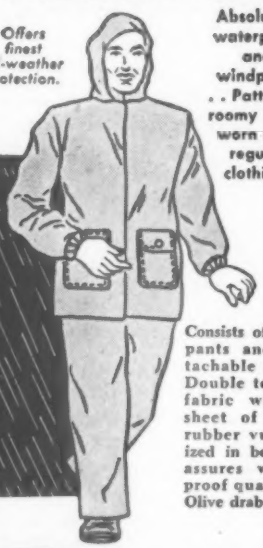
Management is accountable for the health and safety of employees and there is no better means of developing good industrial relations between management and the worker than through the establishment of a complete and understanding medical service. The personnel of this service should be properly recognized by management and due consideration given to its recommendations.

Every industrial plant employs a man or crew of men whose job it is to lubricate, repair and tune-up machines so that they may be kept at peak capacity. You will admit that is just good business. It is just as good business for the employer to provide for the ad-

IPCO UTILITY RAIN SUIT

Offers finest all-weather protection.

Absolutely waterproof and windproof . . Patterned roomy to be worn over regular clothing.



Consists of coat, pants and detachable hood. Double texture fabric with a sheet of solid rubber vulcanized in between assures waterproof qualities. Olive drab color.

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Write for Bulletin K-20A

Safety Equipment for all Industries

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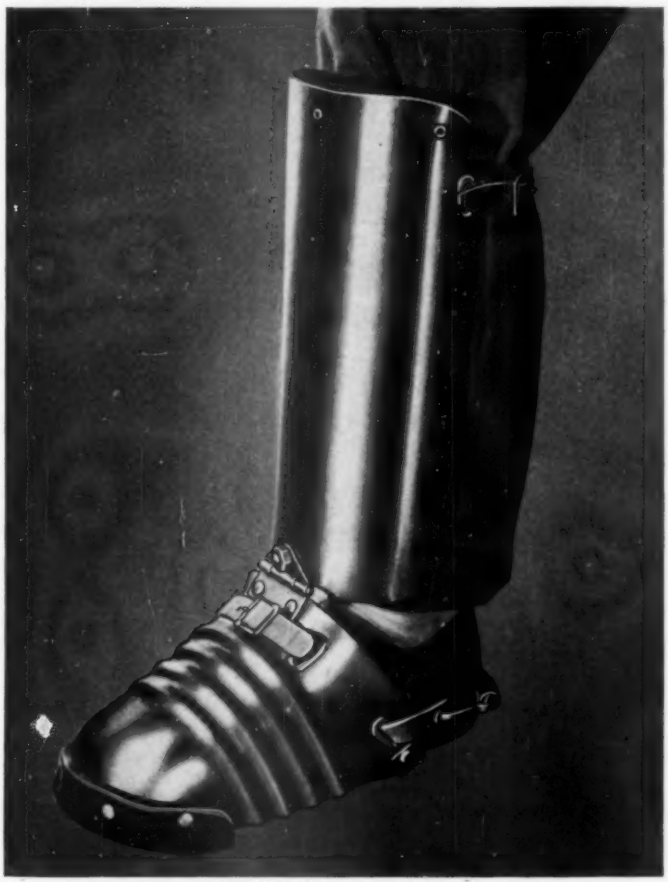

"SANKEY" COMBINATION SHIN-FOOT GUARD

This guard provides protection for TOE, FOOT, INSTEP, and SHIN. It is constructed of aluminum alloy, weighs 34 oz. each, has an overall height of 15 in. from the floor. These guards are being used by adz operators, cattle herders and shacklers, pneumatic tool operators and handlers of piled scrap, steel, pigs, billets, etc.

Right — IMPROVED FOOT GUARD fitted with Full Rubber Sole.

For additional information about "SANKEY" Foot, Toe and Leg Protective Guards please write the ELLWOOD SAFETY APPLIANCE CO., 219 Sixth St., Ellwood City, Pa.

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PREVENT THIS

WITH THIS

SAFETY "Luminum Line"
ADJUSTABLE HAND TOOL HOLDER

Prevents Smashed Fingers!

Here's a "Safety" tool that will eliminate a lot of accidents. Made of cast aluminum for light, rugged construction. Tools of various sizes are held in holder by spring pressure — quickly changed. Holder is available in four sizes, to hold tools from ¼" to 1¼" square.

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- Steel Stamps
- Cold Chisels
- Drifts
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- Other Hand Tools

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SAFETY STEEL STAMPS

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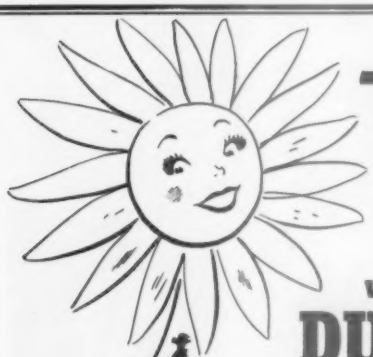

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More than 24 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. Has all patented DUPOR features. Greater visibility . . . no blind spots! Can be worn with goggles or glasses.

Sample sent $2.50 pp

H. S. Cover Fog-Proof, Gas-Tight Goggles for use with above respirator . . . $1.65 pp.

H. S. COVER, South Bend, Ind.

justment, repair, and "lubrication" of the human machines on which the operations of the steel machines depend. Good health, wholesome working conditions, and protection against hazardous processes are essential if we are to attain perfection in our medical program.

Ninety per cent of industrial absenteeism is due to non-industrial injuries and illnesses, and the American College of Surgeons has recognized the need of medical and surgical care for these non-occupational conditions. Only through this means can we minimize sickness and lower absenteeism. The American College of Surgeons rightfully places a limitation upon such treatment to conditions requiring only a minimum of treatment.

I have summarized that limitation in this explanation to our medical people. "Care for the working cases which are acute in character and will be well in a three day period. Take the cases which ordinarily would be treated out of the family medicine chest or corner drug store. Always be alert for cases which should be home and under care of a personal physician." By such a service you not only lower absenteeism, but you permit your medical people to get closer to the employees and develop better relations.

I have on several occasions mentioned "medical service." I prefer that term to "medical department" for it implies a personal and professional service to others while the other names are cold and not distinctive.

I would be remiss if I did not discuss physical examinations. No person should ever be employed until after a complete physical examination has been made. This is a protection to the employee as well as the company. Physical examinations are not made for the purpose of rejecting the physically handicapped individual but are made so that proper job placement will follow. No man should be rejected if he can do the job intended without danger to himself or his fellow worker. All physical defects should be listed and then evaluated by the examiner against the job specification.

Industrial machines frequently require complete overhauls to bring them back to the peak of efficiency. In like manner the human machine requires periodic physical checkups to ward off the disabling effects of disease. A complete physical examination by a competent physician at least once a year is the finest insurance any one can have against the encroachment of age. It is invaluable to management as well for, by detecting the defect or disease early, you extend the life of the employee which means increased production years from an experienced person.

Employment of the handicapped individual is encouraged; if properly placed, he will, as a rule, be a valuable employee. He has suffered and thus will be safety conscious. He knows the difficulty of employment and thus will appreciate a steady job. His absenteeism will be less than others for the same reason. When a handicap or deformity is noted, the question should be asked, "Can he perform the job and will his employment be a hazard to himself or others?" If he can do the job without endangering himself and others, he should be recommended for employment.

To have an accident free section, a supervisor must be trained in safety and must be imaginative as well. Through long years of experience, he knows the causes of most accidents and thus must be alert to detect the first sign of a coming accident. These signs may be physical such as a loose board, an open pit, a leaning stack or poor housekeeping. These signs may be of human origin as manifest in the employee's relationship to his job or his fellow employee. Here we should detect the first signs of fatigue, headaches, nervousness and irritability, actual illness, and even carelessness. The so-called accident-prone individual falls under this classification, and this is where the medieal service enters the picture, if you will use their knowledge and experience.

Ask yourself, "Are we in our plant waiting for injuries to point

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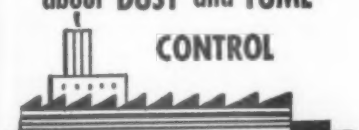

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Do You Have These Problems

cuts,
burns,
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PLANT KITCHENS AND RESTAURANTS

Now, you can reduce unsafe conditions and practices in kitchens and restaurants with a safety manual especially prepared to help eliminate service accidents.

Point by point, covers the use and maintenance of good equipment, and better employee practices. Gets down to details on how to handle damaged or worn utensils, bread and meat slicers, dishwashing machines, broken glass, steam and hot water scalds, meat grinders, ranges and cooking equipment, good housekeeping, and many other danger points in the kitchen. Concisely deals with serving of food, collisions, waste of food and breakage, care of floors and aisleways, etc.

USE the kitchen and restaurant section in HOTEL ACCIDENT PREVENTION to help your workers do their jobs speedily, cleanly and safely. Follow the example of leading hotels in cutting down accident losses and increasing quality of services in these special hazard areas.

MEMBER PRICES

1 to 9	10 to 99	100 to 999	1000 or more
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WELDING CURTAINS

to confine the welding operation to a given area

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Used to protect machinery, and other equipment from water, dust and snow.

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NOW...Links of VINYL PLASTIC bring You a Better FLOOR MAT

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Here's the New Vinyl Link Mat that meets unlimited service applications.

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KEEPS ITS NEW LOOK...

These Vinyl links outwear ordinary rubber links many times . . . Color stays clear and bright . . . They resist soil absorption, keeping their clean look longer. They are firm and resilient, giving continuous slip-proof SAFETY. They resist oil, gasoline and grease — won't soften or damp rot. Assembly of colored links permits optional designs in red, brown, green, white and black.

IN STANDARD COMBINATION OF COLORS and SIZES — Or Made To Your Specifications —

Standard pattern shown above: Black with red link border and center in 17" x 25", 18" x 30", 24" x 36", 30" x 48" . . . Made also to your requirements in size and color design . . Write today for full story and prices.

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out accident causes?" Usually it is not too difficult after an employee has sustained an injury to determine that he needs more training, or should have worn protective gloves or safety glasses or should have checked a machine before starting it, or should have used a different tool. When one fills out the accident report, the cause, responsibility, and recommendations against repetition must be listed. All this is after an injury.

When a man sustains an injury because of an unsafe act, his foreman or supervisor may be a bit reluctant to tell him about it while he is suffering. All of this could be saved if we would tell the employee all about it before hand. Not once but enough times so that we are sure that accident will never happen.

Preventive maintenance is a phrase we hear frequently in our plants, usually with reference to machinery or equipment, but bodies run down just as machines do, and when they do, performance suffers. Most of us are aware of the fact that preventive maintenance as related to health is extremely important—fully as important as the application of this principle to machinery and equipment, for the human body is probably the most intricate mechanism known. Ask yourself these questions.

1. Do you think there may be a health problem in your group?
2. Are sanitary facilities adequate and properly maintained?
3. Do you watch for evidences of ill health among those employees for whom you are responsible?
4. Is there need for a special physical check-up on any of your people?

And I am going to add a fifth question. "Are you getting full benefit out of your medical service?"

A periodic review of these questions by you will go a long way towards maintaining the health of employees. Preventive human maintenance is also an individual problem. Each individual must realize that he is required to follow simple basic rules of good hygiene. Most of our people know these basic principles but often a reminder is helpful. A program of

continuous health education is essential.

Preventive health maintenance is a cooperative venture of the production supervisor, the medical and safety service and the employee.

A Poor Bargain

(From page 37)

have a lab. An expensive one. Can't it do jobs like that for you?"

"You ask Doc Moller," I said.

He did, right then, by phone. From the receiver came five minutes of splutter in a heavy German accent. The Doc, who is two-thirds research chemist and one-third practical metallurgist, indignantly declined to take on such jobs.

Then Robertson spoke up. "For a modest fee, we could buy any of these services. The price Lake offers us is at least $4,000 a year under Diamond's cost to us last year, and it's a fixed price we can count on."

I wasn't ready to talk money, yet, so I let that go. Instead I talked public and employee relations. "Lake," I said, "has a pretty good reputation. But its claims staff is spread pretty thin, especially in Missouri and Wisconsin, where we have some high-accident operations. That means, if they are going to protect us against unfair claims, they are going to take longer on investigations, and our legitimate claimants are going to have delays in getting their money. I've checked this point with other safety men, and they've had that experience. If you'll talk to Mac about this, from the labor relations point of view, he'll tell you it can hurt plenty, and that the gripes get into the community and hurt public relations as well."

The comptroller growled, "Intangibles! Look, man, sales are 7 per cent below last year. Costs are 4 per cent up. I need something definite before I turn down a chance to save $4,000 a year."

"O.K." I said, "Let's look at the cost picture. On our retrospective rating plan with Diamond last year, we paid in premiums $4,000 more than Lake will charge. Lake, on the basis of our

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No. 31 Grinders and Chippers Goggles

No. 335 Welders Coverspec Goggles

"CHAMPION"

EYEGARDS

with 10 way ventilation

NEXT BEST THING TO YOUR EYES

Giving your men the finest in eye protection doesn't mean you have to pay premium prices. Get Eyegard goggles and save the difference! They're the goggles that provide greater comfort because the lightweight plastic frame is molded to form-fit the face . . . greater protection because the goggles are impact-resisting . . . greater ventilation through three large vents at side of cup and seven additional vents around the lenses. Cool and fog-free. With all their exclusive features, they cost no more than ordinary goggles. Get Eyegard "Champions" on next order.

Write for free catalog of Eyegard Equipment . . . it will save you money!

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DIVISION OF THE BURDETT OXYGEN COMPANY • CLEVELAND, OHIO

Genuine Natural Rubber INDUSTRIAL GLOVES

REINFORCED SAFETY

NON-SLIP FINGERS— PALM-THUMB CROTCH

No. 5261 FIRM-GRIP
No. 5615 SMOOTH
LENGTH: 14 inches
GAUGE: .045-.055
COLOR: Brown
SIZES: 10-11-12

The outstanding value and hand safety specification throughout industry. Heavy gauge, steam-cured, high age-resistance and exceptional durability with extra heavy reinforcement at points of wear. Long and short gauntlets in heavy and lighter gauge styles with all-over smooth surface also available in genuine neoprene latex.

*Request sample and quotations.

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NOW for a better fit, more comfort, longer wear

NEW, IMPROVED

NEOPRENE HOOD INDUSTRIAL

CURVED-FINGER GLOVES!

HOOD has done it again! For years, HOOD gauntlets and knit wrist gloves have been the choice of industry. Today, the new, improved models are ready to provide new comfort and safety for *vital* hands. Exhaustive tests *prove* their superior wear! There's ample knuckle allowance! Fingers and thumbs are curved for more efficiency! Gauntlet shown has thumb crotch reinforcement! There are no seams on the working surface! Knit wrists are *color fast!* Both models are bigger, more flexible! Yes, be sure of new protection, new efficiency with the new, improved HOOD Industrial Gloves. Order from your jobber today!

HOOD for Safety plus

HOOD RUBBER CO.
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WHY KEEP EMPLOYEES IN THE DARK?

LET THEM SEE YOUR MESSAGES . . . ON ILLUMINATED DIAMOND BULLETIN BOARDS

- Ventilated, non-fogging
- Easy to read day or night, any kind of weather.
- Sturdy, all metal construction
- Dust, weather, waterproof
- Available in single and double units

ORDER NOW!

SAFETY FIRST SUPPLY COMPANY
425 Magee Street, Pittsburgh 19, Pa.

good accident record is giving us a 25 per cent credit on the standard premium rate.

"Lake has undoubtedly made that bid on the basis of a close study of our record. They've spotted the fact that we have not only a better-than-average experience, but also a record of rapid improvement in rate. I took over the safety director's job in November, 1947. In 1948, our insurance cost us $3,000 less than in 1947, and in 1949 it cost $8,000 less than in 1948. These reductions are the result of good experience reflected in a retrospective rating plan.

"Under the Lake proposal, we freeze our rate for a year. Under the Diamond arrangement, we may be better or worse than we have been. My own conviction is that we are going to make more progress. If we do, we're going to save many times $4,000 if we stay with Diamond."

There was a good deal of talk after that, and some of it was pretty rough cross examination. But in the end, I won out. We'll stick with Diamond, for one more year at least.

The next time Joe Marint buys me a lunch, I'll know I earned it.

(To be continued)

Britain's Factories

(From page 40)

weaver. He is a man of about 45. He started work in a Clyde shipyard at the age of 14. He worked as an engineer and graduated up to the drawing office. In his spare time he attended classes at the local technical school every weekday night for several years and took an external degree at London University. After 14 years' work in industry he got a job as a factory inspector.

After a number of years inspecting in Scotland he was transferred to the West Riding of Yorkshire. It is the policy of the Factory Department to move their inspectors around so that they can get as wide an experience as possible of all kinds of industry. So there you have man with an industrial background and a university degree.

able to meet employers and get on well with them. He is typical of most factory inspectors in Britain today.

A third of the factory inspectors at present are women. All of them have university degrees, but few of them have a background of actual industrial work. I suppose that there are not enough women available, at present, with both these qualifications.

Britain is divided into twelve divisions for factory inspection and today there are hundreds of factory inspectors under the control of H. M. Chief Inspector of Factories.

Up to quite recent times inspection of factories was a Department of the Home Office and I can remember when factory inspectors were looked on as a sort of policeman who snooped around and turned up unexpectedly to catch an employer breaking the law. Many employers resented their visit as government interference. But since then there has been a big change in the whole attitude to factory inspection and it is shown by the fact that now they come under the Ministry of Labor and not the Home Office. The reason why manufacturers now welcome them is because they are able to give advice on how to cut down the number of accidents. In fact, employers often actually call them in for consultation.

I should like to discuss particularly this more constructive attitude towards industrial accidents. They do occur more frequently in some factories in spite of the best safety devices. In most cases the initial trouble is slight—maybe a cut or a scratch. Real injury and loss of time comes later if a doctor is not at hand to treat the wound properly and prevent septic poisoning. Most of the big British factories now employ a full-time safety officer, and there are safety committees representing workers and management.

At the entrance to every factory and workshop in Britain an abstract from the Factory Acts is posted for all to read. This is required by law and these abstracts have been up, with amendments, for close to a century. But the most conspicuous things you see

PIPE MARKERS anyone can use—everyone can read

QUIK-LABEL Pipe Markers conform to American Standards Association Pipe Identification System. QUIK-LABELS come on handy cards . . . stick without moistening. Names of materials printed in large black letters on correct ASA background colors. CAN BE READ UP TO 75 FEET. Markers for over 140 materials, *including all materials listed in ASA Standard A13,* available on Brady Stock Cards. Specials made to your order. QUIK-LABEL Pipe Markers are Silicone Plastic coated to resist dirt, grease, fumes, moisture . . . indoors or out. Replace slow and costly painting and hand stenciling. Exclusive Starter-Strip automatically releases part of label for fast peeling. QUIK-LABELS mark your pipes so that anyone who can read will know what's in them. ***QUIK-LABELS leave no room for doubt . . . or tragedy.*** Write for useful literature and FREE SAMPLES today.

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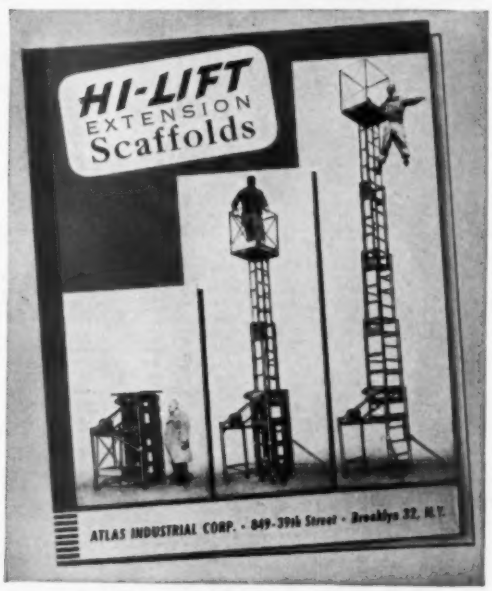

Describes HI-LIFT Extension Scaffolds which can be extended from a six-foot ladder to a 30-foot scaffold in less than 5 minutes . . . hand or electrically operated. Built to meet individual requirements.

Also makers of Hi-Lift Marquee Servicer and Atlas One-Man Truck Loader.

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SAFEGUARD MEN and TOOLS *with* BUHRKE GUARDS

FOR ALL TYPES OF EDGED HAND TOOLS

Specialists for 50 years
WRITE FOR DETAILED INFORMATION

R. H. BUHRKE CO.
4701 W. Grand Ave., Chicago 39, Ill.

in factories today are not these notices required by law but voluntarily displayed posters to help in the campaign to prevent accidents. The Royal Society for the Prevention of Accidents, working together with the Ministry of Labor and National Service, issue these posters weekly. Pamphlets and leaflets are also published and distributed to the workers.

I remember seeing a poster in a factory with a picture of a death's head skull looking out of some revolving cog wheels, but that is the nearest I have seen to a gruesome note. British people seem to respond to the comic method of putting a case more than the grim method. I remember one such comic poster. In the first picture it shows a man lecturing with a woman about her loose hair as she stands at her machine. But he is standing near a machine with a guard not properly fixed and the next picture shows him standing in his underclothes looking up at his clothing which is revolving around the shafting while on the wall beneath the shafting he is reading a poster which says "Loose clothing is dangerous."

The Royal Society for the Prevention of Accidents has produced a little booklet with pictures and rhymes, for the Ministry of Labor. Here is one of the rhymes:

Old Henry loves to tend machines
And keep them bright and shiny,
He started in his early teens,
A willing lad, though tiny.

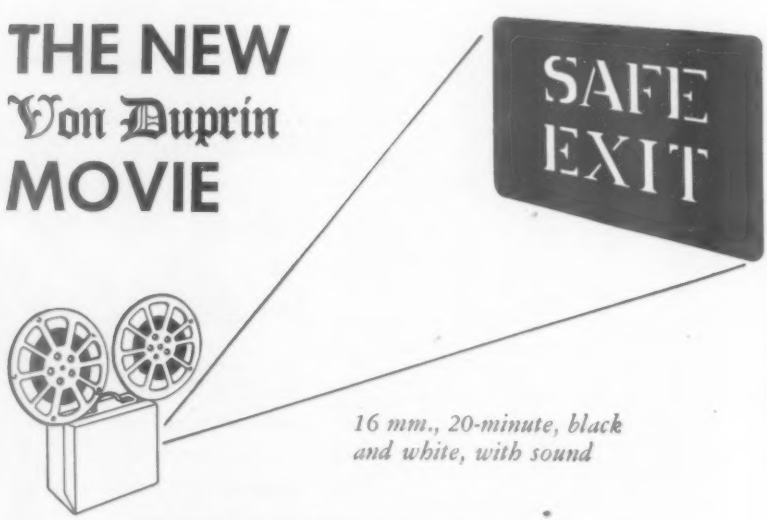
Experience soon came his way
And taught him to be cunning
Now to himself you'll hear him say,
'Don't touch it while it's running'.

That lesson which he learned in youth,
When cleaning moving gears, a tooth
Nipped off his little finger.

That is the sort of rhyme that a factory worker will read with amusement and he will probably remember it and pass it on.

Here is another one, dealing with the danger of neglecting a small cut or scratch. But this one has a more serious ending.

THE NEW Von Duprin MOVIE



16 mm., 20-minute, black and white, with sound

Tells the story of the vital need for ample exits, adequately protected. "SAFE EXIT" is a serious contribution to the cause of safety, with very little about Von Duprin panic devices in it. It is supplied without rental charge for showings to safety committees and councils, inspector's meetings, training classes, etc. For booking request blanks, write

VISUAL AIDS DEPARTMENT
VON DUPRIN DIVISION
VONNEGUT HARDWARE CO., INDIANAPOLIS 9, INDIANA

Adolphus was a husky chap
Who laughed at cuts and scratches.
He cared for bruises not a rap
And scorned adhesive plasters.

One afternoon, not heeding much,
He slightly cut his fingers
T'was never in his thoughts that such
A trifling 'scratch' could linger.

For days he laughed and worked and played,
All germs and dirt defying,
Till when, too late, he sought first aid
The Doctor said 'You're dying'.

The dangers of tampering with electricity in the factory are kept in mind by this verse:

To mention all Tom's stupid pranks
Would take a month of Sundays;
But so that he may earn YOUR thanks
We'll only quote last Monday's.

Electric starters, wires and plugs
Which have 'indispositions'
Are only tampered with by 'mugs'
—or expert electricians.

The Safety Rule says 'do Not touch',
But Thomas wasn't suited;
In proving that he knew so much
He was electrocuted.

The workers themselves, through safety committees, can do a lot towards the prevention of accidents. As many big factories now employ safety officers, the tendency is for factories in Britain to become self-inspecting in matters of safety.

In London, at the Factory Department's Industrial Museum, all the various safety devices are on view. There you can see actual machines in operation with effective guards and fencing and there are expert attendants to give advice.

This is where we come to one of the most important changes that has taken place since the early days of factory inspection—the way in which the makers of new machinery and plant have been led by the government to fit the necessary fencing to their machines and to make improvements in the construction of safety devices before the machinery is actually installed in the factory.

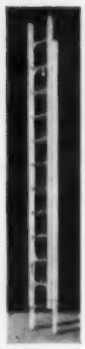
At the Industrial Museum in London practically all the exhibits are on loan from machinery manufacturers. The actual makers have designed and fitted the safety devices. The advantage of the Indus-

Gold Medal Single Ladder
Rung Braces. Tie Rods. Sizes 8' to 24'. Approved by Underwriters' Laboratories, Inc.

Costly
HELP ELIMINATE ACCIDENTS
with these
Safer LADDERS

When you buy ladders, put safety first. It's good business to insist on "Gold Medal" equipment. That's a practical way to cut your accident rate. For nearly three quarters of a century, Gold Medal Ladders have proved their superiority on every type of job.

Gold Medal Ladders are designed and skillfully built for lasting service. But safety is the first consideration. *You can depend on Gold Medal equipment!* Write today for Gold Medal Ladder Bulletin L-69.



Gold Medal Extension Ladders
A high-quality ladder. Sizes: 16' to 52'. Approved by Underwriters' Laboratories, Inc.

Gold Medal Platform Ladders
Provide wide working platform, rung back, knee-braced steps and truss-rodded. Sizes: 4' to 18' (height of platform). Approved by Underwriters' Laboratories, Inc.

Manufacturers of:
GOLD MEDAL Tubelox Steel Scaffolding — Safety Scaffolding Machines — Junior Safety Swinging Scaffolds—Steel Sidewalk Bridges —Single, Extension and Platform Ladders • "TROUBLE SAVER" Sectional Steel Scaffolding—Adjustable Steel Trestles—Steel Scaffold Brackets.

GOLD MEDAL LADDERS SCAFFOLDING

For Greater Safety . . . Efficiency . . . Economy
THE PATENT SCAFFOLDING CO., Inc.
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BRANCH OFFICES: Atlanta • Boston • Chicago • Cleveland • Dallas • Detroit • Kansas City, Mo. Los Angeles • Miami • Milwaukee • Philadelphia • Pittsburgh • San Francisco • Seattle • St. Louis

SURESEAL PK GLOVES
WITH GRIPTITE FINISH

GLOVE COST ~~$9.90~~ 60¢

In a tough, on-the-job test, one manufacturer found that Sureseal PK Gloves with Griptite Finish wore 18 times longer, handled 18 times as many pieces, as good hot mill gloves heavily wrapped with friction tape. 18 pairs of hot mill gloves (plus friction tape) were costing the manufacturer $9.90. He got the same amount of service from one pair of Sureseal PK gloves costing 60¢, a savings of 93%.
Sureseal PK Coated Gloves with non-slip Griptite Finish can turn in some nice savings for you, too.

For details write: Dept. S

THE SURETY RUBBER CO. CARROLLTON, OHIO

Asbestos Gloves for HOT Jobs

STEEL-GRIP-210-L

There's a *BIG* difference between asbestos gloves, and you can *tell* the difference when you get Steel-Grip 210-L asbestos gloves. The quality stands out — in the sturdy, close-woven asbestos cloth . . . Underwriters' grade . . . from the best mills in the United States. The quality stands out when you get 210-L *in* your hands and *on* your hands. Check the seamless, one-piece quality construction, no seams at the wrist or working edges to pull out or burn out on a hot job just when protection is needed most. The quality stands out also in the careful design and proportioning, in the big roomy cut, in the loose, airy comfort, in the fleece cotton lining that's anchored in each finger and thumb and won't pull out.

Thorough inspection at every step of manufacture doubly insures dependable protection, makes them veterans of rough, tough service. Get Steel-Grip 210-L and you will see what 38 years of experience and know-how mean in low-cost dependable protection. Standard 11, 14 and 23 inch lengths. Other lengths and many *special types* of asbestos gloves and mittens are available.

Write for Catalog. We are designers and manufacturers of a complete line of safety clothing. Tell us your requirements.

Industrial
GLOVES COMPANY

Main Factory: 1716 Garfield St., DANVILLE, ILL.

(In Canada: SAFETY SUPPLY CO., Toronto)

trial Museum works two ways. The firms get publicity for their products among potential buyers and the country benefits from safety in production. Machine makers are now actually selling safety with their machines and factories are growing more and more into self-inspecting units.

Nearly all the later safety codes are based on agreement reached as a result of conferences between employers and work people and inspectors.

Today, what was once resented in industry as government interference and a kind of police patrol is now generally accepted and welcomed as a public service, preventing—or at least—reducing the number of accidents and in thinking ahead about safety in factories.

Job-Centered Training

(From page 33)

choice questions, are immediately scored by the participants themselves. By thus reviewing controversial problems, the leader is able to get even broader participation from the entire group than might otherwise be achieved.

Supervisors are given pamphlets or folders containing additional information and summaries of the sessions in order to get some after-the-meeting consideration of the several subjects. When the ten-hour series is completed, the "students" are presented with a bill-fold-size card, certifying to the completion of the training course in the "Elements of Accident Prevention for Supervisors." These cards are signed by the vice-president and general manager of the division sponsoring the program and the safety director of the corporation. Each supervisor, by his signature on the back of the card, indicates that he will help achieve the desired safety results by:

1. Setting a good example for his men and his fellow supervisors.
2. Following the Dravo Corporation Safety Policy to the letter.
3. Always giving *work orders with safety.*

The Safety Series of Dravo Corporation's Supervisory Development Program is not novel. But it is designed to be different in its presentation of often dry and sometimes obvious material, and different, also, in that meetings are conducted at or near job sites. Dressing up the old story should stimulate supervisors to give better day-to-day consideration to an important and ever-present problem.

Data Sheet

(From page 29)

colors, like fluoresecent colors, differ from the luminescent colors. Dyes and coloring may be added to modify daylight colors without materially affecting luminescence.

23. Phosphorescent pigments are synthetic compositions of zinc sulfides, cadmium sulfides, and calcium and strontium sulfides, which derive their phosphorescent characteristics from a high temperature heat-treating process. Unlike pigments containing radium, these substances are non-toxic except that precautions used for lead paints should be followed in re-

HANDEEZ
REMOVES SHOP GRIME *SAFELY!*

Don't confuse HANDEEZ with ordinary harsh abrasive-action hand cleaning compounds. HANDEEZ works differently—through a gentle emulsifier blended with a sterilized vegetable emollient. It lifts grime from the pores, leaving skin tissue unharmed and unbroken by tiny crevices which invite infection. Cutting oils and other deep-seated shop grime yield readily to the HANDEEZ formula which spells prompt, efficient cleansing with the added skin-safety factor.

Write for the booklet "Be Kind to these Hands."

The C. B. DOLGE CO.
WESTPORT, CONNECTICUT

moving or working with cadmium pigment paint.

24. Calcium and strontium phosphorescent pigments are sensitive to water and acids, and if not properly protected by a binder medium, they are unstable. Since luminescence is destroyed by moisture, luminescent plastics exposed to water must be of the moisture-resistant type, and phosphorescent paints must be protected by a clear top coat of vehicle or another effective method.

25. Re-excitation does not produce deterioration. Properly compounded plastics containing phosphorescent pigments have responded to light as long as ten years after molding.

26. Phosphorescent materials may be used for safety purposes with due recognition of the properties of the pigments. Paints or plastics should be used only in locations where they will receive normal exposure to light. For maximum visibility these materials are best applied in fairly large or bold areas.

27. Artificially illuminated signs, such as exit signs, are ineffective in the event of a power or

Figure 3. An exit sign made of phosphorescent plastic which will glow in event of an electrical failure. (Courtesy Luminescent Plastics Corp.)

other failure. Illuminated signs and markings made of phosphorescent material are continuously activated by the lamp and will glow hours after failure of the lamp or power.

28. Instruments dials, signaling and other devices used by aircraft pilots and operators of other transportation equipment which sometimes requires the operator to work in darkness may be coated with fluorescent or phosphorescent pigment.

29. Phosphorescent-coated fab-

Sizes 3 feet to 16 feet in height with standard rubber safety shoes at no extra cost.

For Safety's Sake Use

DAYTON SAFETY LADDERS

Maintenance men everywhere rely on Dayton Safety Ladders for maximum safety and convenience. Daytons are constructed of tested airplane spruce and reinforced with rigid steel supports to give great strength and lightness of weight.

Handrails of steel guard the large roomy platform for added safety. Half of platform can be raised to form an extra step, when needed. These famous ladders can be set up instantly, are easy to carry and fold compactly for storing. Automatic locking feature insures safety while ladder is in use.

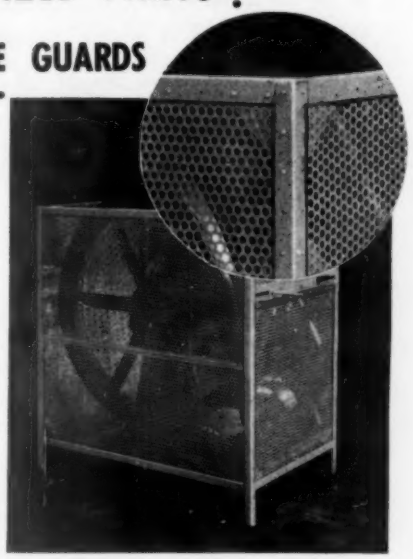
Write today for Bulletin No. D-8

DAYTON SAFETY LADDER CO.

2339 GILBERT AVE. CINCINNATI, OHIO

In Canada—Safety Supply Company—Toronto

GUARD FOR SAFETY *with*
H & K STANDARDIZED PARTS
for
BELT and MACHINE GUARDS



- Easy to Assemble
- Strong Rigid Construction
- Adequate Ventilation—High Visibility
- A Fine Investment

Properly built guards for belts and moving parts of machines are not an expense—they are an investment in safety. H & K furnishes perforated angles, bands and reenforcing gussets from which your maintenance man can assemble a frame to exactly fit your needs. Then the frame is covered with perforated steel sheets and the finished guard can be mounted on our detachable floor posts and sockets.

Write for complete information.

Recommended by safety inspectors and approved by the Underwriters Laboratory.

The Harrington & King Perforating Co.

5645 FILLMORE STREET, CHICAGO 44, ILL. 114 LIBERTY STREET, NEW YORK 6, N. Y.

Get the safe, sanitary, economical

JUDSEN

FOOT BATH

● Here's the foot bath that protects workers against athlete's foot, ringworm and other contagious foot infections—at lower cost!

The Judsen Foot Bath provides better sanitation for all factories, institutions, schools, etc., because its round shape makes it easier to clean —no corners to collect dirt and debris.

The non-slip tread on the inside makes the Judsen Foot Bath safe for stepping in and out. No danger of creeping on wet floors.

The Judsen Foot Bath is molded from tough, high grade rubber that resists the inroads of antiseptic solutions. No matter how much use it gets, the Judsen Foot Bath will outlast any other, thereby giving you more value at less expense.

The Judsen Foot Bath offers you opportunities to make great savings in antiseptic too! Its 19" diameter and 3½" depth is just right to avoid waste and a convenient size for any shower room, large or small.

Make this profitable investment in safe sanitation — order your Judsen Foot Baths today!

JUDSEN RUBBER WORKS, INC.
CHICAGO 24
Established 1891

ric on plastic tape with an adhesive backing may be used to outline temporary obstructions, openings, and other hazards.

30. Phosphorescent plastics are formed into flashlight casings, switch plates, and similar articles for easy location in darkness.

31. Phosphorescent and fluorescent materials have not proved suitable for darkrooms and similar places which are kept dark for long periods. Radium paints may be used to a limited extent in photographic darkrooms provided that photographic plates and sensitive papers are not exposed to the radiations.

32. One company uses radi-eye buttons to furnish tiny light sources to mark corners of machines and to indicate instruments and control points. Signs, dials, and other devices coated with radium paints should be purchased from manufacturers and not made locally since special measures are necessary to control the health hazards of this material.

Summary

33. Increasing the visibility of signs, markings, signals, and other accident prevention devices in darkness is highly desirable for safety. Effective use of reflecting and luminescent materials for this purpose depends greatly on the properties of the materials. A source of light is required to utilize either general type.

34. Reflector buttons and reflecting coatings may often be used effectively where headlights, flashlights, cap lamps, and similar sources of illumination are available. Signs and markings made of reflecting materials are readily visible in darkness for several hundred feet. Reflecting coatings may be obtained in various colors.

35. Luminescent materials glow, and consist of fluorescent and phosphorescent pigments in paints, plastics, and tapes. Fluorescent pigments require ultraviolet light to glow. There is no afterglow when the exciting light is extinguished. Red, blue, yellow, and other colors are available.

36. Phosphorescent materials glow from exposure to either natural or artificial light and continue to glow after the light is removed. The useful afterglow varies in durations, depending on the color, length of exposure to light, and other factors. Light blue will glow for ten hours or more under proper exposure.

37. Inasmuch as moisture causes luminescent pigments to deteriorate, luminescent plastics must be properly compounded and paints must be protected from sources of water. Since the intensity of the glow is low in comparison with ordinary sources of illumination, these materials are most useful for close viewing.

38. Names of manufacturers of reflecting and luminous materials are available on request from the National Safety Council.

ACKNOWLEDGMENT

This data sheet was prepared by G. G. Grieve, senior engineer, Industrial Department, National Safety Council. It was reviewed by the Safe Practices Conference Committee and approved by the Industrial Conference of the Council.

THE PLEASURE IS ALL YOURS

WHEN YOU GET YOUR WORK DONE EASIER FASTER SAFER BETTER ON THIS

HANDY-JACK STAIR STAND

Patented

You can feel the safety of the solid frame and guard rail, walk up or down the stairs with both hands full of tools or merchandise, stand well balanced to work most efficiently. Lift the jack handles to roll stand in any direction.

Used by leading industries in stock rooms, cleaning walls and fixtures, servicing lights, painting and general maintenance.

Quality built for many years service. Available in various heights.

Your request for full information will receive prompt attention.

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3401 South Hoyne Avenue

Dept. SN1 Chicago 8, Illinois

NEW SAFETY EQUIPMENT FOR INDUSTRY

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

Electric Lift Truck

The Barrett Power Ox line of electric lift trucks, pallet trucks and tractors, all of which have hitherto been powered by storage batteries, are now optionally available with Ready-Power Units. This gas-electric power unit has been developed to obtain maximum efficiency from motorized trucks and to provide a power supply that delivers maximum voltage 24 hours a day when needed. A number of advantages are submitted by the unit's manufacturer.

By replacing the storage battery, the Ready-Power unit does away with battery chargers, their maintenance and all the problems that go with battery charging. When the unit has been started, no further attention from the operator is necessary. The Ready-Power equipped truck can handle more loads per day. The unit's Walking Speed Control provides three variations for each speed available from the truck's standard mechanism. This permits the right speed for "inching" the load in confined spaces.

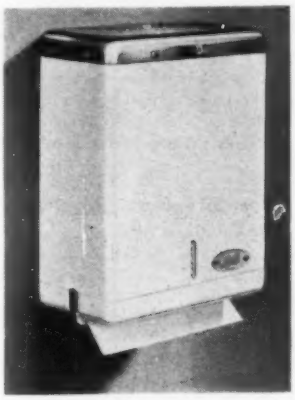
The illustration shows a Barrett Pallet Ox equipped with a Ready-Power "Z-12-5" unit. The sturdy steel housing encloses the unit's members: industrial gasoline engine, generator, fuel tank (located in the unit's base for safety), starting battery and accessories. These trucks both lift and travel elecrically. The manufacturer is Barrett-Cravens Co., 4601 S. Western Blvd., Chicago 9, Ill.

Innersole

Rubberhide Co., Inc., Whitehead Road, Trenton 4, N. J. has developed a safety innersole which consists of a top-grade leather innersole, a spring steel plate and a sheet of rubber frictionized cotton duck, bounded together with a special cement under terrific pressure. The innersole is almost puncture proof and is designed to fit into any conventional work boot or shoe.

Dispensers

A new line of paper towel and toilet paper dispensers has been announced by Bennett Mfg. Co., Alden, N. Y. The single-fold junior paper towel dispensers are available in both chrome plated and baked white enamel finishes. Curved doors are equipped with full-length, piano-type hinges to provide ample bearing surface for long use. Lock and key eliminate



tampering and insure closed doors between refills. The paper is automatically fed by gravity through the bottom slot at the exact angle to eliminate binding, cross-feeding and inexcessibility of towel. Side slots permit checking the towel supply at a glance. Width: 12¼", Depth: 6½", Height: 7¾".

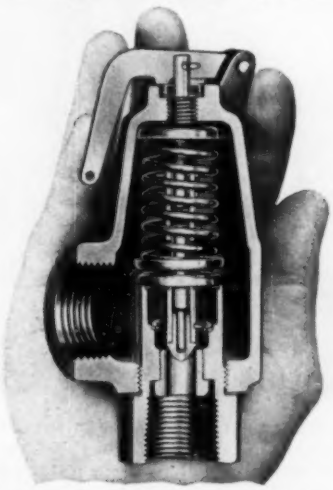
The double-fold towel dispensers are designed to dispense double-fold paper towels of most makes. The full-length, flat front door with rounded corners of the exposed surfaces reduces the possibility of catching and tearing clothes. The front door is securely closed between refills by a lock on top of the cabinet. These dispensers are available in both chrome-plated and baked white enamel finishes. Front slot gives the warning when refilling is required.

Bennett toilet paper dispensers are designed to dispense either single or double-fold toilet paper. A two-tone appearance is provided by the stainless steel tops with white enamel bodies. The full-length and width front door with rounded corners is held securely in place by a lock at the top. The slot in lower front of door gives the amount of paper supply at a glance. Width: 5⅜", Depth: 2⅞", Height: 7¾".

Boiler Relief Valve

A new safety relief valve for hot water heating boilers known as McDonnell No. 33, has been announced by McDonnell & Miller, Inc., Wrigley Bldg., Chicago 11, Ill. The discharge capacity of the valve is 242,900 Btu. per hour, tested and certified by the National Board of Boiler and Pressure Vessel Inspectors, and so designated on the name plate.

Operating characteristics include: (1) When the set pressure of 30 lbs. is reached, the needle lifts just far enough to discharge water at the low rate necessary to take care of the thermal expansion of water. (2) If for any reason temperature rises into emergency zone, increased velocity acts on the "hydra-lift" ring greatly increasing lifting power and snapping the valve wide open to dissipate heat at the high rate of 242,900 Btu. per hour. Precision alignment is achieved by running



stem deep into the valve cone which is stainless steel, hardened and precision-ground to polished finish. A departure is the testing lever which operates independently of the automatic pressure action so that it is not disturbed by the opening of the valve in service.

Liquid Seal Remover

Removal of old finishes, especially on floors or surfaces where further sanding is not possible, is made easier by a new product just developed by Huntington Laboratories, Inc., Huntington, Ind. The solvent, Wade Seal Remover, is a heavy-bodied liquid that is claimed effective in removing old seals, varnishes and other finishes from wood floors, walls or woodwork, and from desks and fine furniture. It is non-flammable, nonexplosive and will not damage the grain or discolor wood. It contains no alkali, water, wood alcohol, acids or lye. One application is usually effective. The remover covers evenly, evaporates slowly, and as a result, penetrates deeper to raise several old coats of seal at a time. It can be quickly and simply applied with a brush, lambswool mop or even a sprinkling can.

NEW SAFETY EQUIPMENT FOR INDUSTRY

Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.

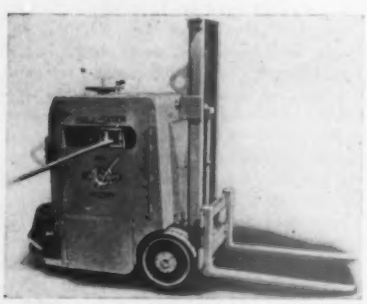
Fire Blanket

Industrial Products Co., 2850 N. Fourth St., Philadelphia 33, Pa., announces a new roller type emergency fire blanket for use in chemical laboratories, oil refineries, paint spray lacquer rooms and other locations where the hazard of clothing catching fire is present. The blanket allows a man

to envelope his body in a few seconds time, cutting off the air and smothering the fire. One arm is put through the blanket loop and a turn of the body is all that is necessary. End of the blanket automatically detaches from roller. Blanket is 80 per cent wool, size 60" x 80", large enough to completely cover from neck to ankles. The unit is designed for fastening to the wall.

"Explosion-Proof" Fork Truck

A new air operated "explosion-proof" fork truck has been announced by Crescent Truck Co., Lebanon, Pa. This truck



was developed for use in small or restricted areas where explosion hazards exist. It operates from any air system at 90 pounds per square inch pressure with a consumption of from 200 to 250 cubic feet per minute. Seventy-five feet of ¾-inch hose on a retracting reel allows full maneuverability in approximately 18,000 square feet of floor area. The truck is built in 2,000 lb. and 3,000 lb. capacities with variations in lift, over-all height, fork length, etc., to meet various service requirements.

In addition to the "explosion-proof" feature, the motor exhaust effects a considerable change of air while the truck is in operation. This provides an extra safety factor when the truck is used in enclosed areas. The truck is particularly applicable in the chemical, paint, oil refinery, explosive and drug industries for loading holds of ships.

Portable Dust Collector

The Kirk & Blum Mfg. Co., 2838 Spring Grove, Cincinnati 25, Ohio, announces a new heavy duty portable dust collector known as type "M". Three models are available in 450, 900 and 1800 CFM at high velocity.

These collectors can be set up anywhere to serve one or several machines for any period of time, or can be readily moved to meet changing needs. They handle dust from grinding, buffing, and polishing metal-working machines and similar dust sources. Each unit consists of motor, exhauster, centrifugal pre-cleaner and steel wool filter after-cleaner.

In all sizes of the new unit the principles of operation are the same. The dust laden air is delivered to a small diameter high efficiency, centrifugal pre-cleaner where all but the finest particles are removed. The air then passes through steel wool filter pads, three inches thick, for final cleaning. Motor and exhauster are completely isolated from dust. The units are fire proof. Housings are extra heavy. Exhausters are heavy industrial type, direct connected to a 3600 rpm., 220/440 volt motor.

Where conditions will not permit the re-entry of cleaned air into the working area, the filters are replaced with air-tight closures and the air vented to the outside. Exhaust stack connections can be furnished at top or any side of the unit. Where it is desired to return the cleaned air to the building, the unit may be equipped with both exhaust stack and filters.

Fire Extinguisher

Randolph Laboratories, Inc., 8 E. Kinzie St., Chicago 11, has produced a new, portable 6 pound carbon dioxide fire extinguisher with 20 per cent additional fire-fighting capacity. It is a compact, lightweight unit, featuring thumb-trigger release and self-aimed nozzle. Only one hand is required to operate the extinguisher from the instant it is removed from the bracket until the flames are extinguished.

The extinguisher contains six pounds of non-toxic, non-damaging carbon dioxide gas, and is especially adapted to smother flammable liquid and electrical fires. It is approved by Underwriters' Laboratories.

Window Cleaners' Belt

The new SAFE-HI shock-absorber Window Cleaners' Belt developed by Rose Manufacturing Co., 1731 Arapahoe St., Denver 2, Colo., employs a new material of the nylon family called Unolyn. Unolyn has the ability to elongate to several times its original length under impact. This elongation, without rebound, spreads the shock of deceleration and permits minimum stress on man, building anchor and all belt parts.

These belts offer the following features:

NEW SAFETY EQUIPMENT FOR INDUSTRY

Manufacturers are invited to send in announcements of new products, or improved special features. Only items which can be considered as "news" to our readers will be published.

(1) Nylon service rope and Unolyn safety rope are completely separate, (2) Service rope takes all the wear because safety rope is permanently longer than service rope at maximum adjustment, (3) All fastenings requiring strength are stitched, not riveted, (4) Single pass, non-slip buckle, (5) Choice of wide, comfortable back pad of 4" web inside waist belt, (6) Light alloy rope eyes enclose waist belt as well as the two ropes.

Twin Cartridge Respirator

A new line of twin cartridge respirators specifically developed to provide protection against severe respiratory hazards through a basic face piece and seven interchangeable filters is announced by American Optical Co., Southbridge, Mass.

The seven filters protect workers against (1) a combination of all dusts, (2) organic vapors, (3) acid gases, (4) combined acid and organic gases, (5) ammonia, (6) combination of organic vapors and all dusts, and (7) metal fumes. The respirator is known as R5000. The respirator will be distributed with one or more pairs of filters, depending upon the needs of the user.

The basic face piece is molded from durable rubber and has a new "rolled" edge that curves inward to give a snug fit without leakage. Other features include a new flexible fitting brace for shaping the respirators to individual features, a highly efficient inhalation and exhalation system and increased field of vision through thinner filter cartridges.

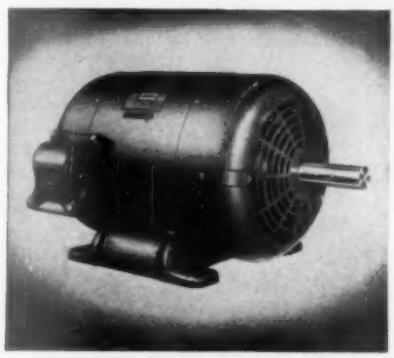
Floor Marker

Lasting Products Co., 200 Block S. Franklintown Road, Baltimore 23, Md., has developed a new floor marker known as the "Little Giant Handi-Liner" which makes straight, curved, continuous or skip lines or lettering. It is light in weight, easy to operate and low in cost. It is recommended especially for operators of parking lots, garages, warehouses, self-service stores, factories and drive-ins. Visible paint flow controls waste of paint. It is made of welded steel, sturdy and long-lasting. It paints lines approximately 3⅞ inches wide, using any good traffic or line marking paint.

Explosion-Proof Motor

New squirrel cage, totally enclosed, type CSP, explosion-proof Life-Line motors are available from Westinghouse Electric Corp., P. O. Box 968, Pittsburgh 30, Pa.

Heavy steel construction is used for resistance to corrosive atmospheres. Special primer, thermoset varnish and nitrocellulose base finish are used. Pre-lubricated ball bearings provide effective lubrication without attention—no greasing program is necessary.

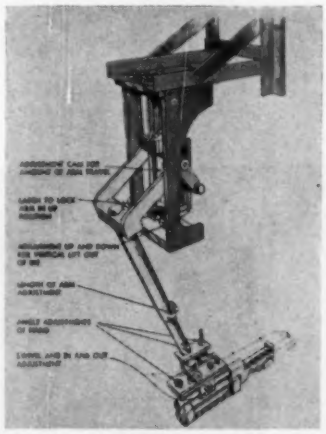


These motors are designed for constant speed drive applications, such as pumps, blowers, or compressors, and may be safely used in any location where Class I Group D explosive materials or atmospheres are encountered. They are available in frames 224 to 326, in 1- to 20-hp ratings, for 2- and 3-phase, 25-, 50-, 60-cycle, 208-, 220-, 440-, 550-volt service.

Iron Hand

Development of a new junior size Iron Hand, specially designed to accommodate small and medium sized punch presses being used by manufacturers of pressed metal products, is announced by Sahlin Engineering Co., 467 S. Woodward Ave., Birmingham, Mich. Used to remove sheet metal stampings from presses automatically, it is recommended for presses with bed widths ranging up to 72 inches and pressure capacities up to 250 tons.

Features of the new device include safety since the press operator is required only to place the part in the press, the removal being performed automatically by the Iron Hand. By concentrating on the feeding of the press, operators often step up production as the unloader can be set to catch every stroke. The Iron Hand is self-contained, and easily transported from one



press to another. It can be used to remove blanks or formed articles with equal effectiveness. It is adaptable to both open and enclosed type presses. The distances of lift-out and swing are adjustable to suit different size stampings.

Synchronized with the stroke of the press by electric control, the Iron Hand works automatically; yet it can be locked out of position for die tryout or when the press is idle. Made of steel plate the Hand, with its hardened steel jaws, can remove parts weighing 20 pounds or more.

Plastic-Type Floor Material

The Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio, has placed on the market a plastic-type floor material for patching wood, concrete floors, or for complete resurfacing. The product, known as Swift-Floor, can be installed with either the tamper or by rolling. Since it is set by compression, rather than by water evaporation, the more traffic that flows over it, the heavier the load, the smoother and harder and better the floor becomes. Application requires just a few minutes. It is packed in 55-gallon lever-top drums, ready to use.

Fire Retardant

Flame-Seal Corp. of Illinois, 230 N. Canal St., Chicago, announces a new fire retardant and non-toxic paint. Called Flame-Seal, it is recommended for use as an interior paint to fire retard all combustible wood surfaces, as well as plywood, veneer, cardboard and various types of fibre partition boards. The coating comes ready to use, requires no mixing of special chemicals, and can be applied directly

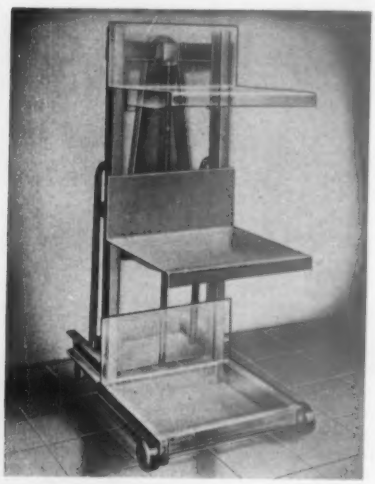
NEW SAFETY EQUIPMENT FOR INDUSTRY

Further information on these new products and equipment may be obtained by writing direct to the manufacturer. It will help in identifying the product to mention this announcement.

from its original container by brush or pressure spray gun. The product has been tested and listed by Underwriters' Laboratories.

New Stacker

The stacker shown here is now offered as a standard unit in the "Portelvator" line of lifting, positioning, and transporting equipment manufactured by The Hamilton Tool Co., Hanover at Ninth, Hamilton, Ohio.



It is of fabricated construction throughout, and utilizes the patented Portelvator lifting principle. Load capacity is 1,000 pounds, maximum height of platform surface from floor is 58 inches and minimum is 6 inches. Platform automatically locks at any position stopped, and cannot slip or "settle" under the load. Platform size is 26 inches from side to side and 24 inches from front edge to protective back plate. Overall dimensions are, height 70 inches, width 32 inches, length 42 inches.

Platform movement is accomplished through hand crank, roller chain, meshing bevel gears, and screw. This method of power transmission is said to endow the platform with extra rigidity, and provide the operator with an extra measure of safety. Provision is made for extra rapid platform movement under light loads. Weight is 328 pounds.

Floor Coating

Time-Saving Specialties, 706 New York Life Bldg., Minneapolis, Minn., have developed a floor coating that provides a safe footing together with a lustrous finish. It is a water resin emulsion coating, easily applied with mop or any clean applicator. The product known as "No-Slip" is especially recommended for linoleum, asphalt and rubber-tile floors. Instructions for its use have been worked out to simplify problems of floor maintenance. The material is non-flammable, contains no wax or harmful ingredients and carries the label of Underwriters' Laboratories.

Garbage Can Enclosures

A new line of garbage can enclosures, humorously referred to as the "Dog House", has been announced by Bennett Mfg. Co., Alden, N. Y. These twin, heavy-duty steel enclosures are designed especially for outdoor storage of two garbage cans, up to 30 gallons each, to protect the garbage from dogs, cats, rodents and insects.

The two top deposit doors swing open and close on full-length hinges which provide ample bearing surface to maintain accurate door alignment during constant daily use. These top doors may be opened until the back of the door rests on the rear slanting side of the enclosure top to provide unobstructed depositing of garbage.

As the garbage is deposited, it is funneled into the garbage can by slanting aprons just below the top doors. These aprons are an integral part of the enclosure cover. The two front doors swing open 180° to provide unobstructed removal and replacing of cans.

Corrosion-resisting steel is used throughout except for the feet which are stainless steel. The overall height is 48", length 47½", and depth 25¼".

Hand Tool Holder

M. E. Cunningham Co., 200 E. Carson St., Pittsburgh 3, Pa., announces a revision of sizes No. 1 and No. 2 of their Luminum-Line adjustable hand tool holder. Designed to prevent smashed fingers in the use of steel stamps, cold chisels, drifts, punches and other hand tools, the holder now weighs considerably less and is more easily operated. The improved design permits the slotted head section to be pushed out, and the stamps quickly changed by the first finger and thumb.

Size No. 1 holder is applicable to ¼" and ½" tools, and size No. 2 to ¼" to ¾" square tools. Holders can be used with square, round, octagon and hexagon shaped tools.

News Items

Safety First Shoe Co., Holliston 3, Mass., announces the development of free safety posters for companies who plan to reduce foot accidents.

* * *

Penetred Corp., Marshfield, Wis., announces the appointment of Super Mold Corp., Lodi, Calif., as licensed manufacturers for the building of special "Penetred" matrices for use in Lodi mold equipment, for the installation of the Penetred wire application to the tread of a retreaded tire.

* * *

J. C. Kemp, General Sales Engineer of Ampco Metal, Inc., Milwaukee, Wis. has been appointed District Manager of Ampco's Chicago Office. Mr. Kemp was formerly Sales Manager located in the Cleveland Office. R. J. Eckl, Assistant General Sales Engineer will assure Mr. Kemp's position as General Sales Engineer.

Ampco Metal, Inc. has appointed Southern Engine and Pump Co., Houston, Texas as distributor of the Ampco Centrifugal Pump Line.

* * *

Paul P. Barker, President of National Production Co., Detroit, announce the sale of the Safe-Line Wire Rope Clamp business to the recently formed manufacturing and distributing organization, National Safe-Line Clamp Co., of which Walter Therssen is owner. The new firm is located at 11252 Nine Mile Road, Van Dyke, Mich.

* * *

William H. Loveman, President, Burdett Oxygen Co. of Cleveland, announces the opening of a new branch store and warehouse at 210 N. Diamond St., Mansfield, Ohio. The new branch will carry a supply of oxygen, Acetylene and other industrial gases as well as a complete stock of welding, cutting and safety equipment and supplies. Also featured will be the complete line of General Electric Welding Equipment.

TRADE PUBLICATIONS
in the Safety Field

These trade publications will help you to keep up-to-the-minute on new products and developments in industrial health and safety equipment. They are free and will be sent by manufacturers without obligation to readers of NATIONAL SAFETY NEWS who are responsible for this work. Send in the coupon below checked for the publications you desire. Please make your requests promptly.

1. **Materials Handling Equipment:** Bulletin No. 25 describes materials handling equipment with many uses throughout industry, effects savings in storage space and in production time. Lewis-Shepard Products, Inc.

2. **Industrial Safety Equipment Catalog:** A 64-page book providing information on eye and respiratory equipment for specific occupational hazards. Among the subjects discussed are: digest of specifications for heat-treated glass, advantages and uses of plastics, types of filter glass, respiratory hazards and gas mask selector tables. Willson Products, Inc.

3. **"The Use of Dust Collectors in the Rubber Industry":** Bulletin 242 studies the problems of nuisance dust and the recovery of usable powdered materials in rubber manufacturing operations. The solutions are shown in photographs and drawings for obtaining better working conditions, closer quality control, recovery of usable material and lowered maintenance costs. American Wheelabrator & Equipment Corp.

4. **Intercom Equipment:** A new line intercom equipment of special interest to executives in every type of business and industry is covered in form No. 290. Presented is the chime-matic signalling system in which calls are indicated by a mellow chime and signal light. It shows what the intercom can do in speeding inter-office communications. Executone, Inc.

5. **"How To Set Up and Conduct a Safety Rx Program":** A booklet containing information useful to any concern planning to establish or expand a program of eye safety. It includes suggestions on how to obtain the necessary services to implement an eye safety program. American Optical Co.

6. **"The Proper Care of Floors":** Every type of floor and floor surface is discussed in this booklet, that is prepared in two parts. Part I covers floor preservation—cleaning, sealing, maintenance; while Part II discusses all types of floor surfaces and the proper methods of maintenance. West Disinfecting Co.

7. **Gas & Liquid Analyzer:** An infra-red analyzer for measuring atmospheric contamination and precise process control is the subject of bulletin DZ-4. It operates on the principle that most gases, vapors and liquids absorb infra-red light. The mixture analyzed generates an electrical signal which is amplified and registered by a recording velometer. Mine Safety Appliances Co.

8. **Floor Plate:** A 36-page booklet on concrete floors with an iron armored surface about ⅛" thick that wears many times longer than plain concrete floors. Spark-resistant, static disseminating, non-dusting, corrosion-resistant, easy-to-clean and economical, it is available in eleven colors. Master Builders Co.

9. **Mechanical Ventilation:** Bulletin 520 shows how mechanical ventilation of industrial structures removing contaminated air necessitates the replenishing of exhausted air. It shows how this can be done, year around, for the improvement of employee health and balancing atmospheric pressure to increase efficiency of combustion equipment and ventilating systems. Dravo Corp.

10. **"Micro Tips":** Number 4 of a series of tips published for plant engineers, electricians and maintenance men as an exchange of ideas on the many uses for precision snap-action switches. Micro Switch.

11. **"Keep Floors Safe":** A brochure on an abrasive filled plastic brush coating that produces an anti-skid surface on wood, concrete or steel deck flooring. Designed for exterior and interior use, it is resistant to gasoline, alcohol, oil and grease and many types of acids. A. C. Horn Co., Inc.

12. **Fireproofing Cement:** A booklet describing the uses of fireproofing cement for application on steel tank supports, skirts, equipment bases and structural columns. It is an easy-to-apply protective treatment which will add to the fire protection of plants. Eagle-Picher Sales Co.

13. **Portable Electric Blowers:** A folder on a portable electric blower with powerful, concentrated, swift moving air for removing dust, dirt, grit and grindings. It keeps motors, bearings, shafting and gears clean, smooth running, free from excessive heat, as well as cleaning interiors. Breuer Electric Mfg. Co.

14. **Tool Guards:** Brochure 94901 illustrates a complete line of guards for sharp edged hand tools made of vulcanized hard fibre securely riveted, with adjustable web strap to secure the tool. Guards include those for hand saws, knives, wire brushes, axes, hatchets and cant hooks. R. H. Buhrke Co.

15. **Floor Machine:** Folder showing an electrically operated floor machine with interchangeable attachments that perform every maintenance job on any type of floor; polishing, steel wooling, sanding, scrubbing, trowelling, waxing and dry scrubbing. Hild Floor Machine Co.

16. **Lens Cleaning Station:** A folder on a lens cleaning dispenser cabinet that is neat, compact, containing lens cleaner, tissue and space for used tissue. Easy to install, use and service, it is made of all-welded steel construction, in white or green baked enamel finish. The Wilkins Co.

17. **Electronic Fire Protection:** A folder discussing an electronic fire detection system that automatically sounds warning of temperature rise, locates and identifies the area of danger. Two-wire closed circuit permits economic installation and eliminates cumbersome wiring. Lord-Taber Co., Inc.

18. **Rubber Covered Equipment:** A catalog showing rubber insulation applied to all types of industrial equipment and production parts; racks, hangers, anode, pickling, material and conveyor baskets, pallets, parts separators, drums, parts, dippers, measures, funnels, pipe and fittings, air agitation systems, protective grids, screens and ventilation equipment. Automotive Rubber Co., Inc.

NATIONAL SAFETY NEWS — FEBRUARY, 1950

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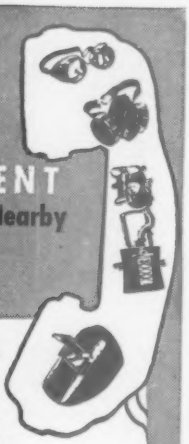

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ATLANTA, GA.—Fulton Supply Co.
BALTIMORE, MD.—Carey Mach. & Sup. Co.
BIRMINGHAM, ALA.—Safety Engrg. & Supply Co.
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16 ROWS OF WIRE *Claws*
IMBEDDED IN RUBBER

***PROVIDE* SURE FOOTING ON *ANY* SURFACE**

You'll have SURE FOOTING the minute you put on the soles and your shoes will be dry because PENETRED Safety Soles are made of High Class Rubber that you securely cement to your work shoes, boots, and rubbers . . . they grip even better as they wear. Sold on a Money Back Guarantee.

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CESCO spectacle-type goggles, with or without sideshields, feature the exclusive Comfort-Bridge.

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Send your name on company letterhead for "Safety Notes"—CESCO's handy pocket memorandum.

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INDUSTRIAL EYE ACCIDENT **COSTS** **UP** 78½% SINCE 193

Profits Go Up... Operating Costs Go Down...

when you eliminate High Eye Accident Costs from what you make and sell!

High eye accident costs can affect your operations adversely two ways: (1) They represent an unnecessary cost that inflates your selling price and hence cuts your volume (2) They lower efficiency through increased unproductive time, idle machine charges, replacing key men with substitutes and by impaired worker morale. All this in addition to the direct costs for first aid and medical care.

Yet unlike other high costs that plague management today–*these can be cut*. How? By establishing an AO Eye Protection Progra which can pay for itself in less than six months' time. Yo AO Safety Representative can prove with case histories th an AO Program *works* — that goggles costing about $2.3 can save sums up to $44,000 annually! Ask him to ca

FACTS TO REMEMBER — Eye accidents cost industry over $5 per employed worker per year — over $328 in compensation per injured man — are 98% preventable.

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